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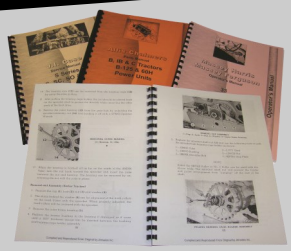

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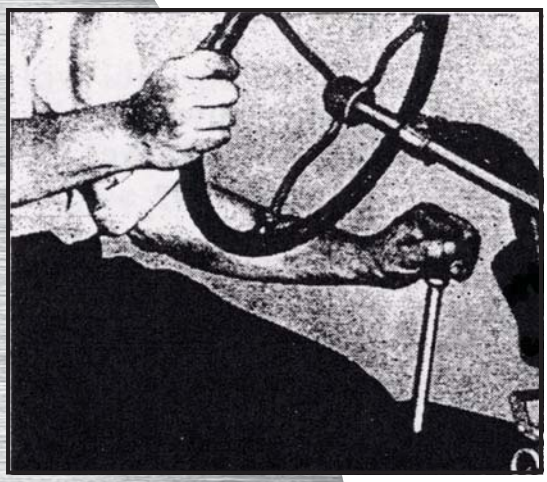

Allis Chalmers

Operator's Manual

302 & 303
Square Baler
Twine & Wire Tie

Operator's Manual

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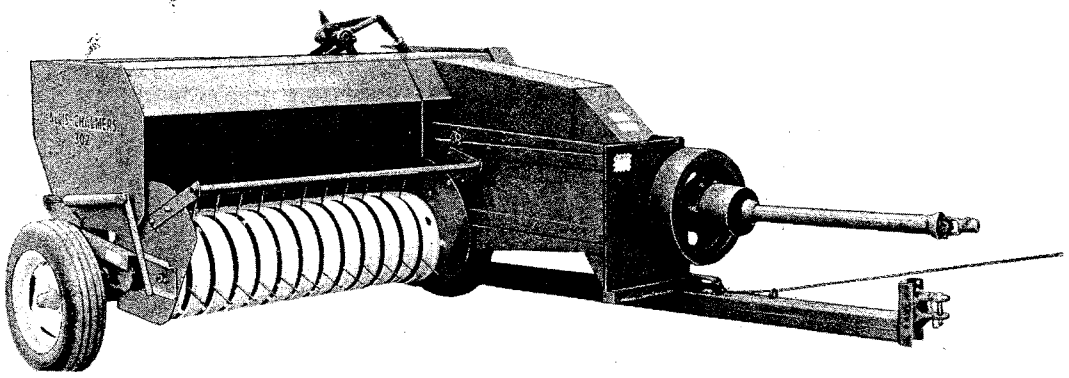
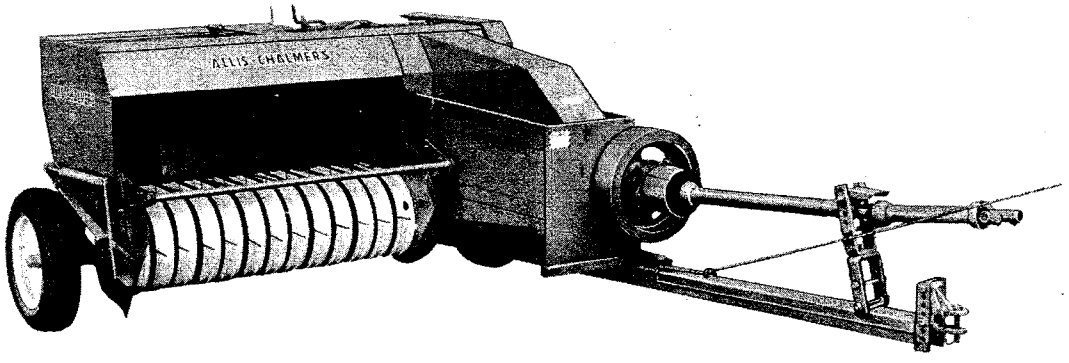
AC-O-302+BLR

NOTES

OPERATING INSTRUCTIONS & SETTING-UP DIRECTIONS

Model 302 and 303 BALE CHIEF Twine and Wire Tie Hay Balers





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NOTES

NOTES

BE A SAFE OPERATOR

AVOID ACCIDENTS

Most accidents, whether they occur in industry, on the farm, at home, or on the highway, are caused by the failure of some individual to follow simple and fundamental safety rules or precautions. For this reason most accidents can be prevented by recognizing the real cause and doing something about it before the accident occurs.

Regardless of the care used in the design and construction of any type of equipment, there are many conditions that can not be completely safe guarded against without interfering with reasonable accessibility and efficient operation.

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT.

THE COMPLETE OBSERVANCE OF ONE SIMPLE RULE WOULD PREVENT MANY THOUSAND SERIOUS INJURIES EACH YEAR. THAT RULE IS:

NEVER ATTEMPT TO CLEAN, OIL, OR ADJUST A MACHINE WHILE IT IS IN MOTION!

"NATIONAL SAFETY COUNCIL"

FOREWORD

This book provides instructions and essential information regarding Operation, Adjustments, etc., of this Allis-Chalmers product. Close adherence to these instructions will result in successful performance and a longer operating life for your equipment.

This "Green Cross for Safety" is used in the book to emphasize safety precautions that should be followed by operator to avoid accident and possible injury. Where you see this emblem heed its warning.

This "Green Cross for Safety" is used only by members of the National Safety Council.

In addition to the written material in this book, actual photographs are used to clearly show the various parts mentioned in the instructions.

All users of Allis-Chalmers equipment are urged to call upon their local dealer's Service Department for all service requirements other than routine care and adjustments. This practice is encouraged as all dealers are kept well informed regarding advanced methods of servicing Allis-Chalmers products and are equipped to render complete service.

INDEX

MODEL 302 BALER SPECIFICATIONS

Length Overall	14'-1-1/2"
Width Overall	8'-4"
Height Overall	4'-6"
Shipping Weight	2540 lbs. (approx.)
Drives	PTO driven, shielded roller chain and heavy duty oil bath gear box with hypoid gears.
Slip Clutch	2 on main drive and pick-up drive.
Over-Running Clutch	1 main drive
Pick-Up Width	55" (60" at the flare)
No. of Tooth Bars & Teeth	4 bars, 48 Teeth
Chamber Size	14" x 18"
Strokes per Minute	70
Length of stroke	28"
Feed Opening	12" x 22" - 264 sq. inches
Bale Weight	Up to 80 lbs.
Bale Length	Up to 42" (adjustable)
Tire Sizes	6.40 x 15, 6 ply, left side 5.90 x 15, 4 ply, right side Ribbed implement type

Standard Equipment
- Support Jack
- Plated Bill Hooks Twine Tie
- 2 Joint Power Line

Optional Equipment
- Bale Counter
- Extension, Bale Chute
- Wagon Hitch
- Pick-Up Gauge Wheel
- Auxiliary Power Unit
- PTO Driven Bale Thrower
- Hydraulic Bale Tensioner
- Speed Lube System
- Dual Wheel
- Heavy Duty Support Jack

MODEL 303 BALER SPECIFICATIONS

Length Overall	15'-7"
Width Overall	8'-4"
Height Overall	4'-6"
Shipping Weight	2600 lbs. (approx.)
Drives	PTO driven, shielded roller chain and heavy duty oil bath gear box with hypoid gears.
Slip Clutch	2 on main drive and pick-up drive.
Over-Running Clutch	1 main drive
Pick-Up Width	55" (60" at the flare)
No. of Tooth Bars & Teeth	4 bars, 48 Teeth
Chamber Size	14" x 18"
Strokes per Minute	70
Length of Stroke	28"
Feed Opening	12" x 22" - 264 sq. inches
Bale Weight	Up to 80 lbs.
Bale Length	Up to 42" (adjustable)
Tire Sizes	6.40 x 15, 6 ply, left side 5.90 x 15, 4 ply, right side Ribbed implement type

Standard Equipment
- Support Jack
- Plated Bill Hooks Twine Tie
- 3 Joint Power Line

Optional Equipment
- Bale Counter
- Extension, Bale Chute
- Wagon Hitch
- Pick-Up Gauge Wheel
- Auxiliary Power Unit
- PTO Driven Bale Thrower
- Hydraulic Bale Tensioner
- Speed Lube System
- Dual Wheel
- Heavy Duty Support Jack

The Allis-Chalmers Manufacturing Company reserves the right to make changes in the above specifications or to add improvements at any time without notice or obligation.

NOTE
Since this Manual covers both the Model 302 & 303 Balers the photographs used in this Manual are either of the Model 302 or 303 Balers.

LUBRICATION

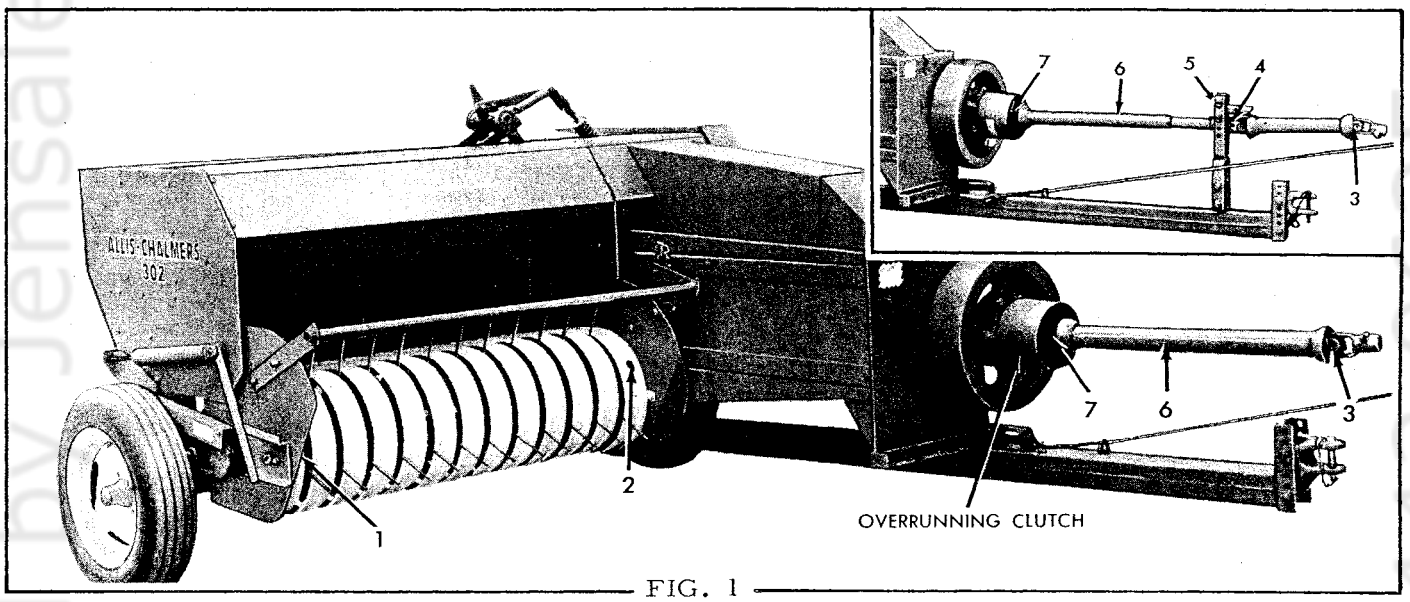


FIG. 1

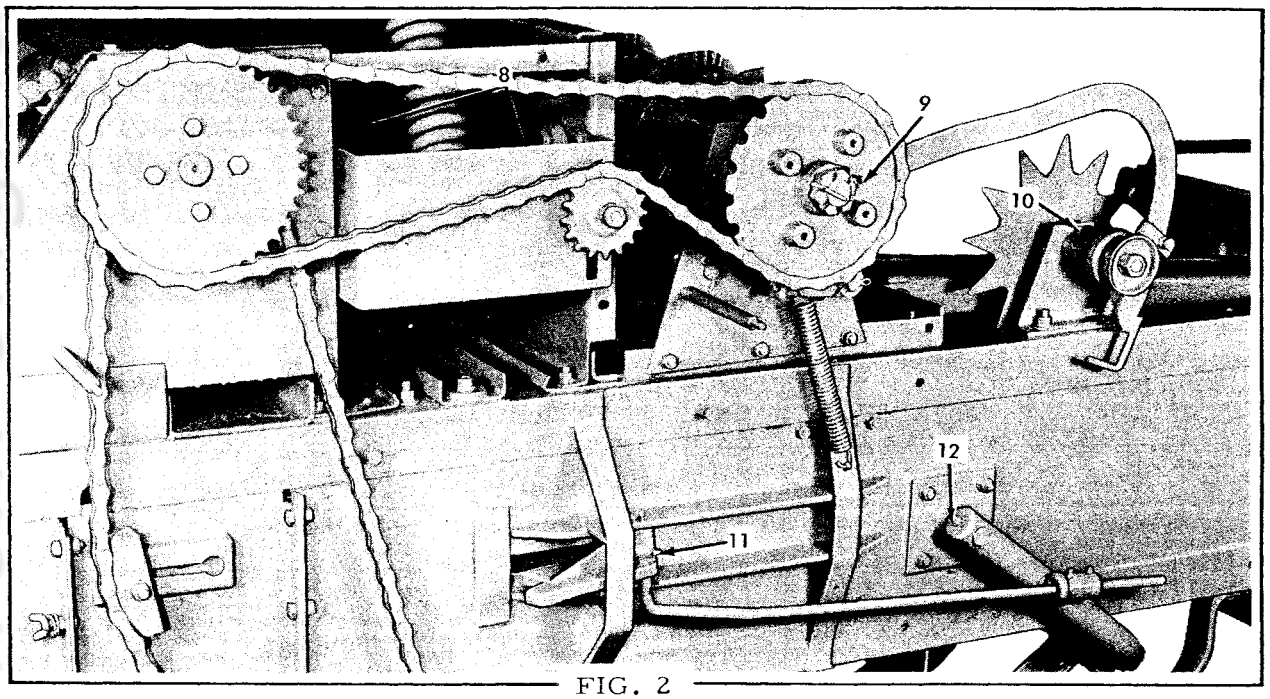


FIG. 2

This Chart points out pressure gun fittings, which require lubrication once daily or every eight hours. When working in extremely dusty or sandy conditions, the machine may require lubrication more often. Lubricate linkage with light engine oil.

FIG. 1, 2, 3, 4, 5, 6 & 7

NEVER ATTEMPT TO CLEAN, LUBRICATE, OR ADJUST THIS MACHINE WHILE IT IS IN MOTION!!!

1. R.H. Pick-Up Crank - 4 fittings (Fig. 1)
2. L.H. Pick-Up Crank - 4 fittings (Fig. 1)
3. Front U-Joint (Fig. 1)
4. Center U-Joint (Fig. 1) (303 only)
5. P.T.O. Support Bearing (Fig. 1) (303 only)
6. P.T.O. Sleeve (Fig. 1)
7. Rear U-Joint (Fig. 1)
8. L.H. Feed Rake Pivot (front & rear) (Fig. 2)
9. Knotter Driven Sprocket (Fig. 2)
10. Star Wheel Bearing (Fig. 2)
11. Ram Stop Pivot (Fig. 2)
12. L.H. Needle Pivot (twice daily) (Fig. 2)

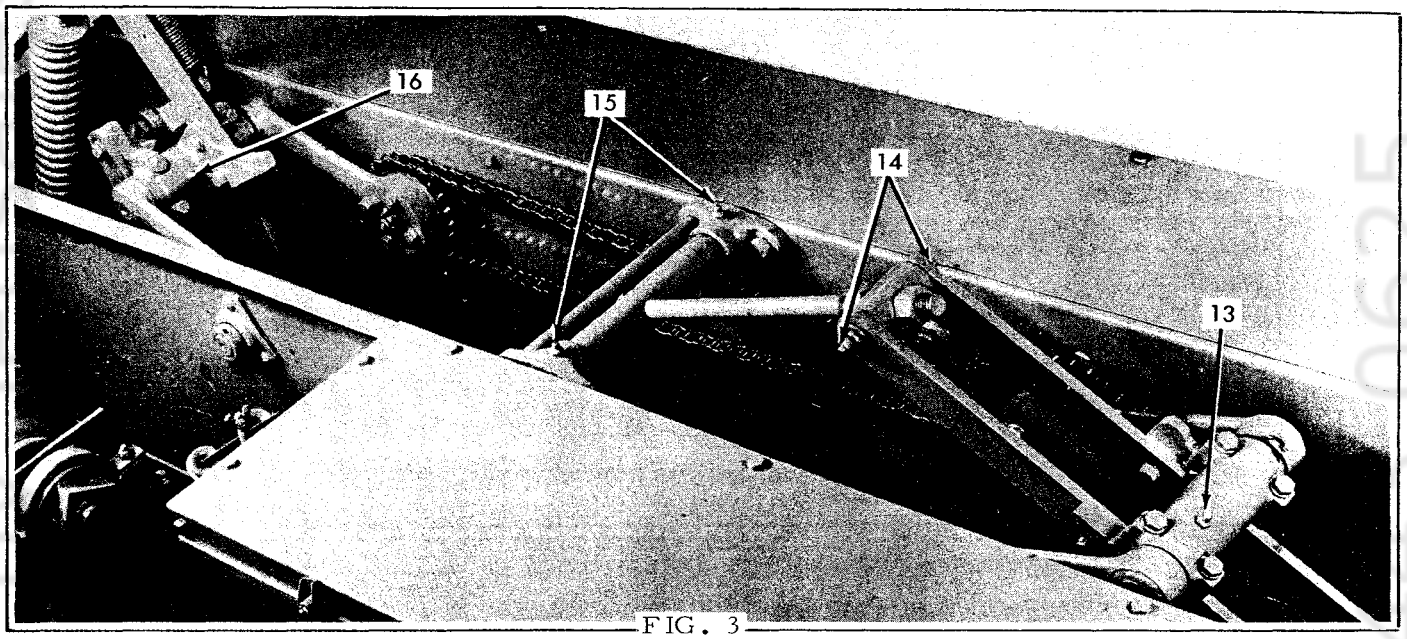


FIG. 3

13. R.H. feed rake bearing (Fig. 3).

14. R.H. feed rake pivot (front & rear) (Fig. 3)

15. R.H. feed rake anchor (front & rear) (Fig. 3)

16. L.H. feed rake bearing (Fig. 3)

17. Ram pivot pin (Fig. 4)

18. Main gear box - fill to filler plug with 140 S.A.E gear lube. (Fig. 4)

19. Secondary gear box - fill to filler plug with 90 S.A.E. gear lube. (Fig. 4)

Lubricate drive pins of over-running clutch with light engine oil. (Fig. 1)

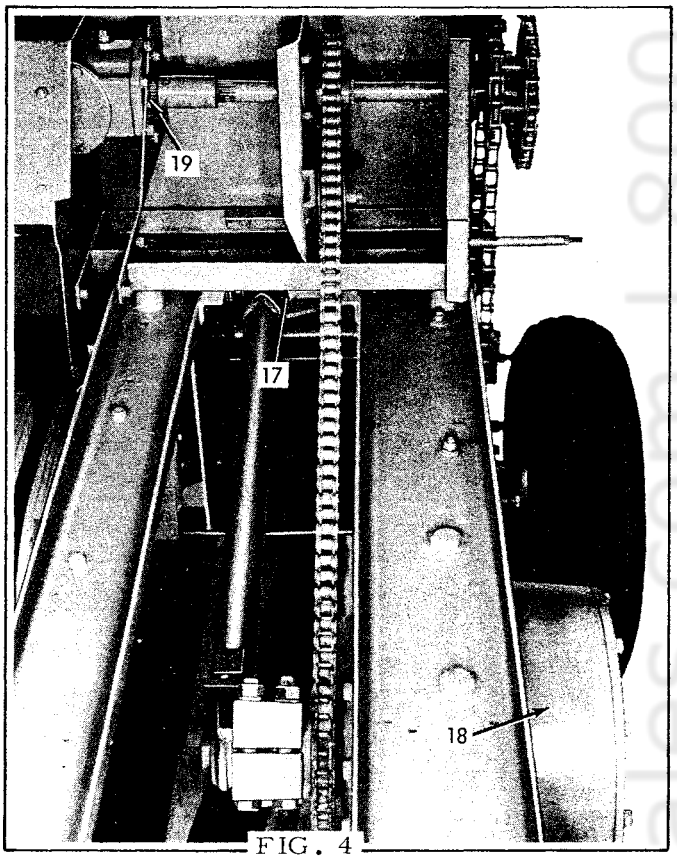


FIG. 4

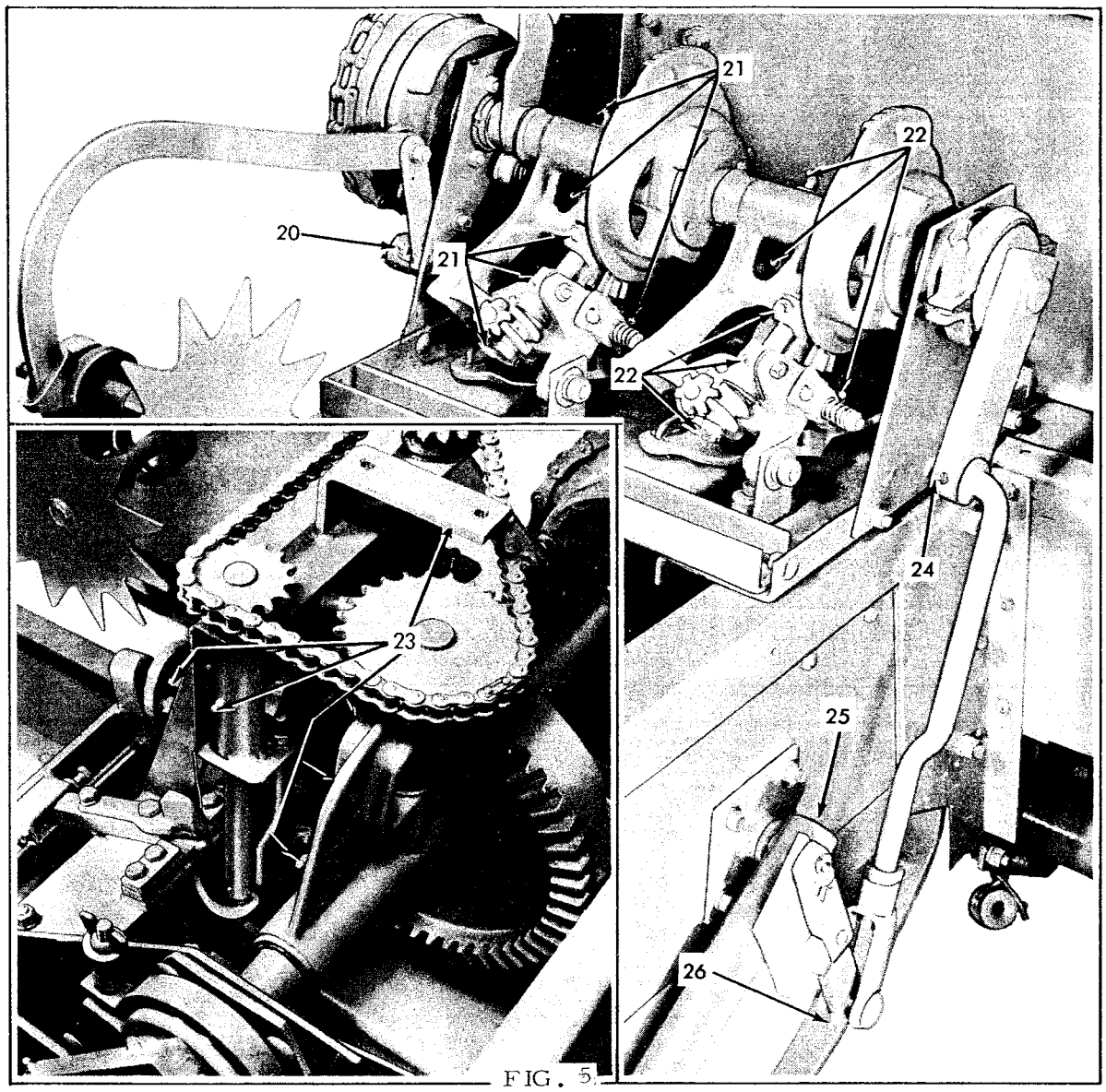


FIG. 5

20. Knotter trip pin (Fig. 5)

21. L.H. knotter - 6 fittings (twice daily)(Fig. 5)

22. R.H. knotter - 6 fittings (twice daily)(Fig. 5)

23. Wire twister - 6 fittings (twice daily)(Fig. 5)

24. Needle crank arm (Fig. 5)

25. R.H. needle pivot (twice daily)(Fig. 5)

26. Needle frame arm pivot (Fig. 5)

27. R.H. pick-up bearing (Fig. 6)

28. Wheels - (2) clean, pack and adjust once each year. (Fig. 6)

Lubricate all chains with light engine oil once daily.

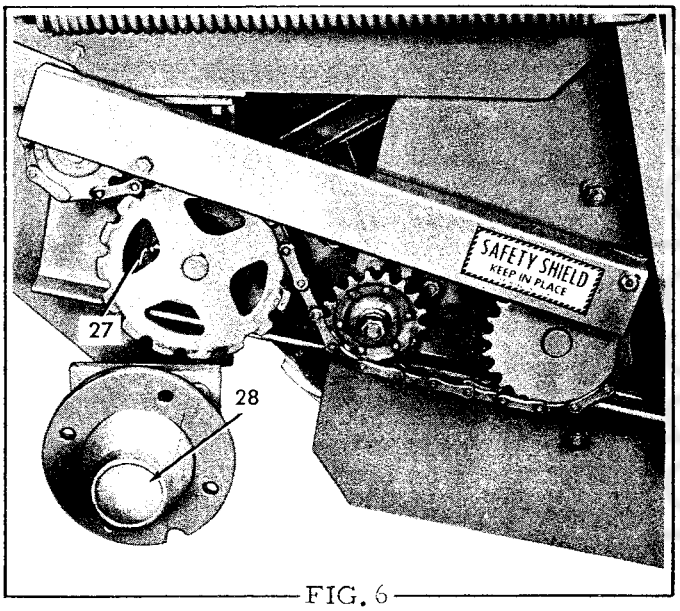


FIG. 6

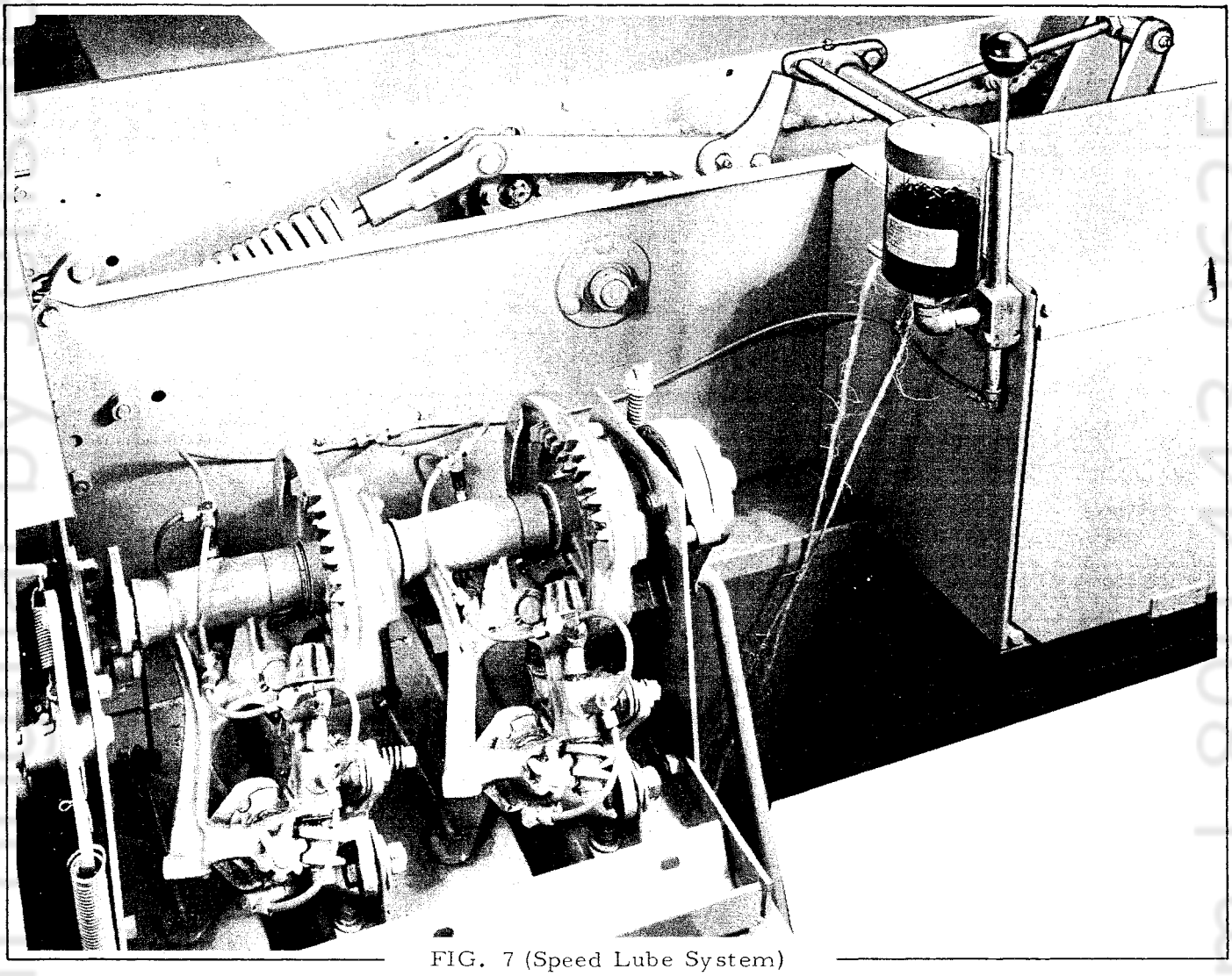


FIG. 7 (Speed Lube System)

SPEED LUBE SYSTEM f/KNOTTER (FIG. 7)

The Knotter Assemblies equipped with the Speed Lube System require lubrication about six times per eight hour day, which consists of one stroke of pump plunger per lubrication.

DO NOT apply lubricant to knotter drives before or during operation because dust and debris will adhere to knotter and cause difficulty.

CAUTION: A special lubricant must be used in this Speed Lube System. Use of heavy lubricants will cause the entire system to become inoperative.

Allis-Chalmers lubricant No. 249680 should be used in this lubricating system. If this is not available, S.A.E. 90 or EP80 can be used satisfactorily in the system.

Knotter drives, bill hooks, and twine discs should be treated with a rust preventive before storage of baler to prevent rusting of these assemblies. Rust preventive should be removed before baler again goes into operation.

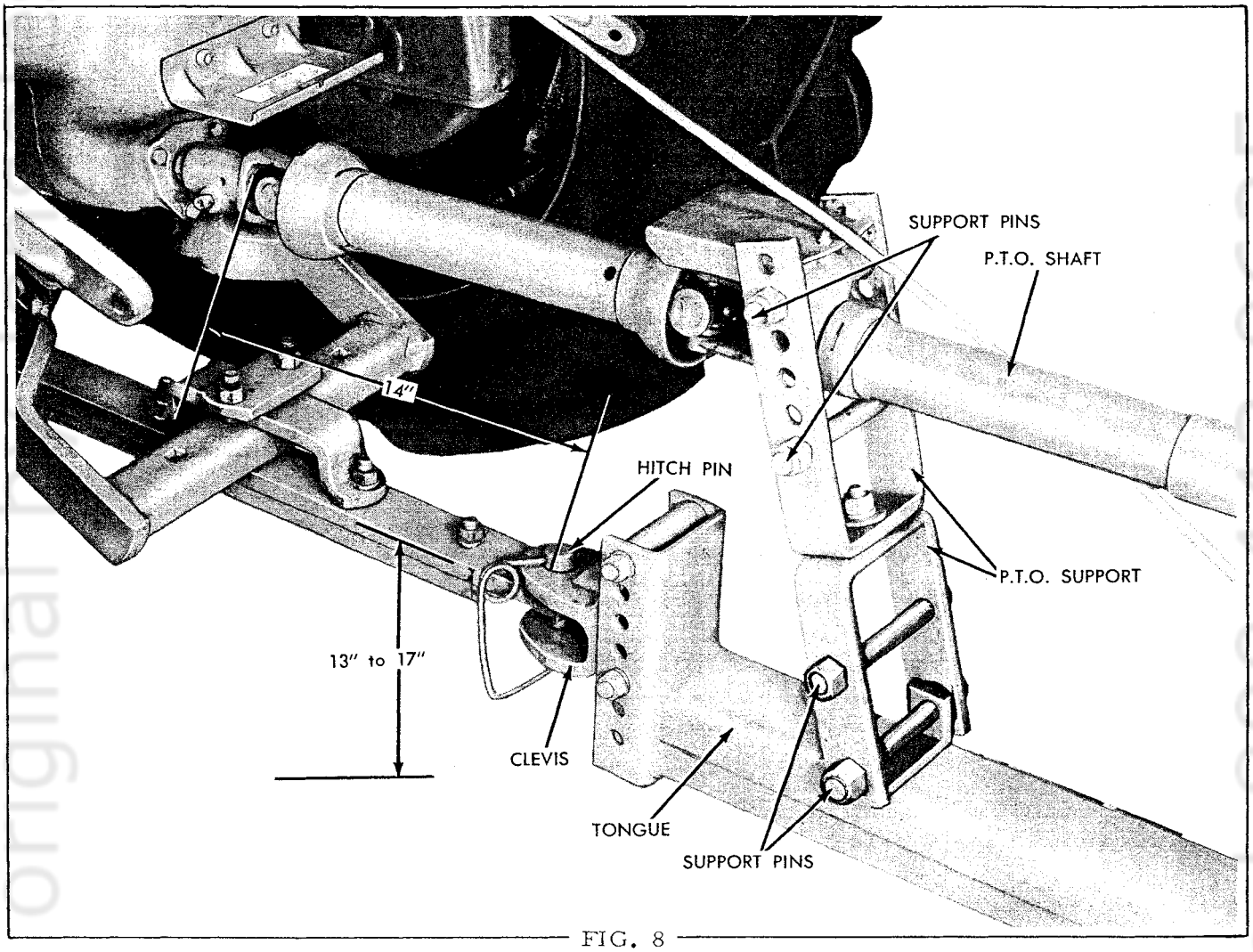


FIG. 8

HITCHING (FIG. 8) (303 Baler)

Before hitching the baler to the tractor, adjust tractor wheels to narrow tread position. Tractor must be equipped with an A. S. A. E. drawbar set to measure 13" to 17" from ground to top of drawbar. The distance from center of hitch pin hole to end of tractor P. T. O. shaft must be approximately 14", measuring horizontally. Tractor drawbar must be clamped to drawbar guide to prevent drawbar from swinging.

Connect baler tongue to tractor drawbar making certain hitch pin is locked in position. Clevis should be located on baler tongue so that baling chamber is level.

Press the front universal joint yoke plunger in, slide the yoke onto the P. T. O. shaft and release plunger to enter groove around shaft.

If tractor has a P. T. O. spline shaft other than 1-3/8", the front universal joint yoke must be replaced with yoke to fit spline shaft of tractor.

Locate P. T. O. shaft in P. T. O. support so the front universal joint assembly runs in as near a horizontal line as possible.

Inflate L. H. Baler Tire 6.40 x 15, 6 ply, to 40 lbs., and R. H. Tire 5.90 x 15, 4 ply, to 28 lbs.

Set P. T. O. speed of tractor at 540 R. P. M., and mark quadrant for throttle lever. P. T. O. speed must not exceed 550 R. P. M. while operating Baler.

P. T. O. speed of 540 to 550 R. P. M. will give 67 to 70 ram strokes per minute.

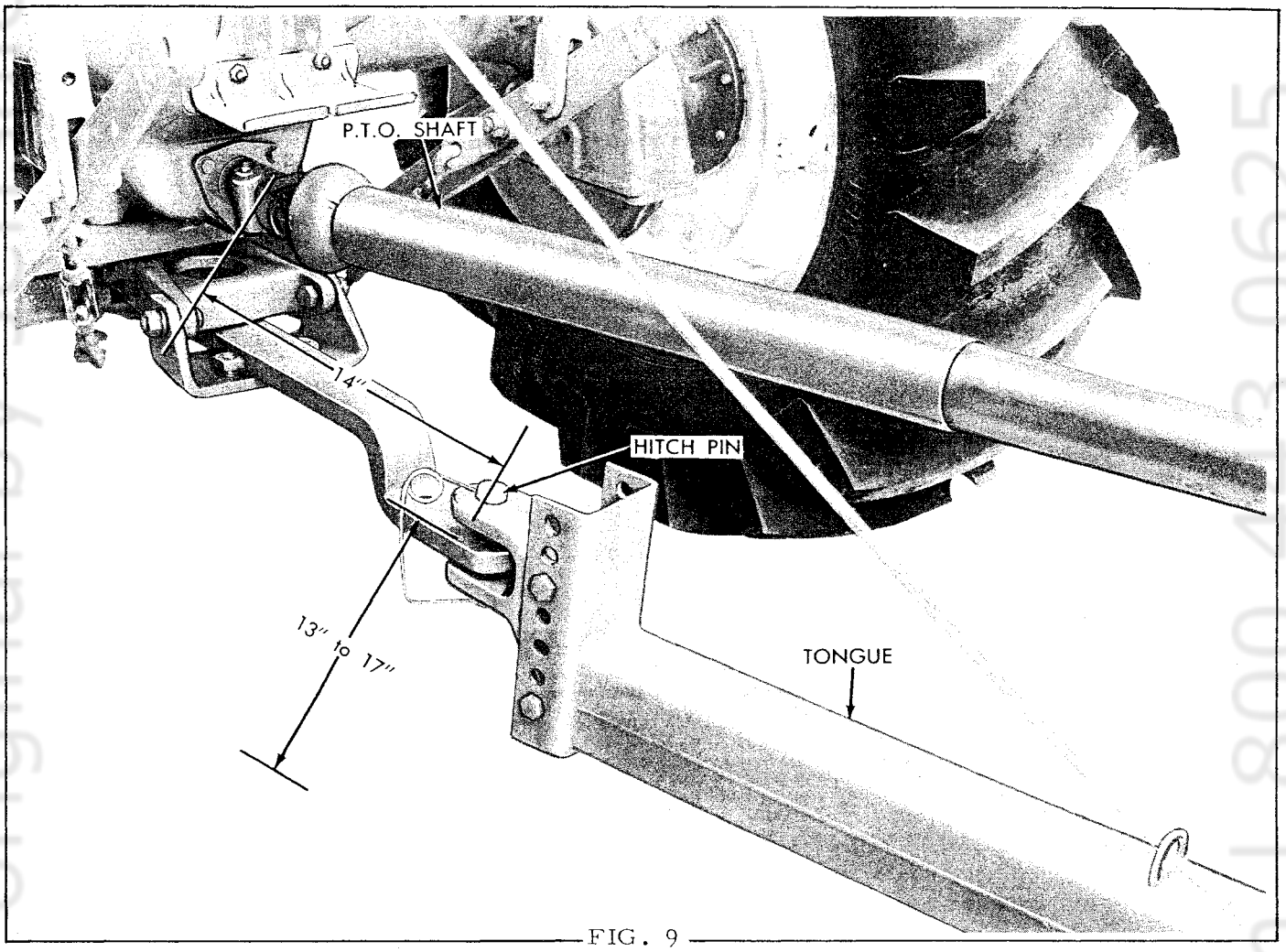


FIG. 9

HITCHING (FIG. 9) (302 Baler)

Before hitching the baler to the tractor, adjust tractor wheels to narrow tread position. Tractor must be equipped with an A.S.A.E. drawbar set to measure 13" to 17" from ground to top of drawbar. The distance from center of hitch pin hole to end of tractor P.T.O. shaft must be approximately 14", measuring horizontally. Tractor drawbar must be clamped to drawbar guide to prevent drawbar from swinging.

Connect baler tongue to tractor drawbar making certain hitch pin is locked in position. Clevis should be located on baler tongue so that baling chamber is level.

Press the front universal joint yoke plunger in, slide the yoke into the P.T.O. shaft and release plunger to enter groove around shaft.

If tractor has a P.T.O. spline shaft other than 1-3/8", the front universal joint yoke must be replaced with yoke to fit spline shaft of tractor.

Inflate L.H. Baler Tire 6.40 x 15, 6 ply, to 40 lbs., and R.H. Tire 5.90 x 15, 4 ply, to 28 lbs.

Set P.T.O. speed of tractor at 540 RPM, and mark quadrant for throttle lever. P.T.O. speed must not exceed 550 RPM while operating Baler.

P.T.O. speed of 540 to 550 RPM will give 67 to 70 ram strokes per minute.

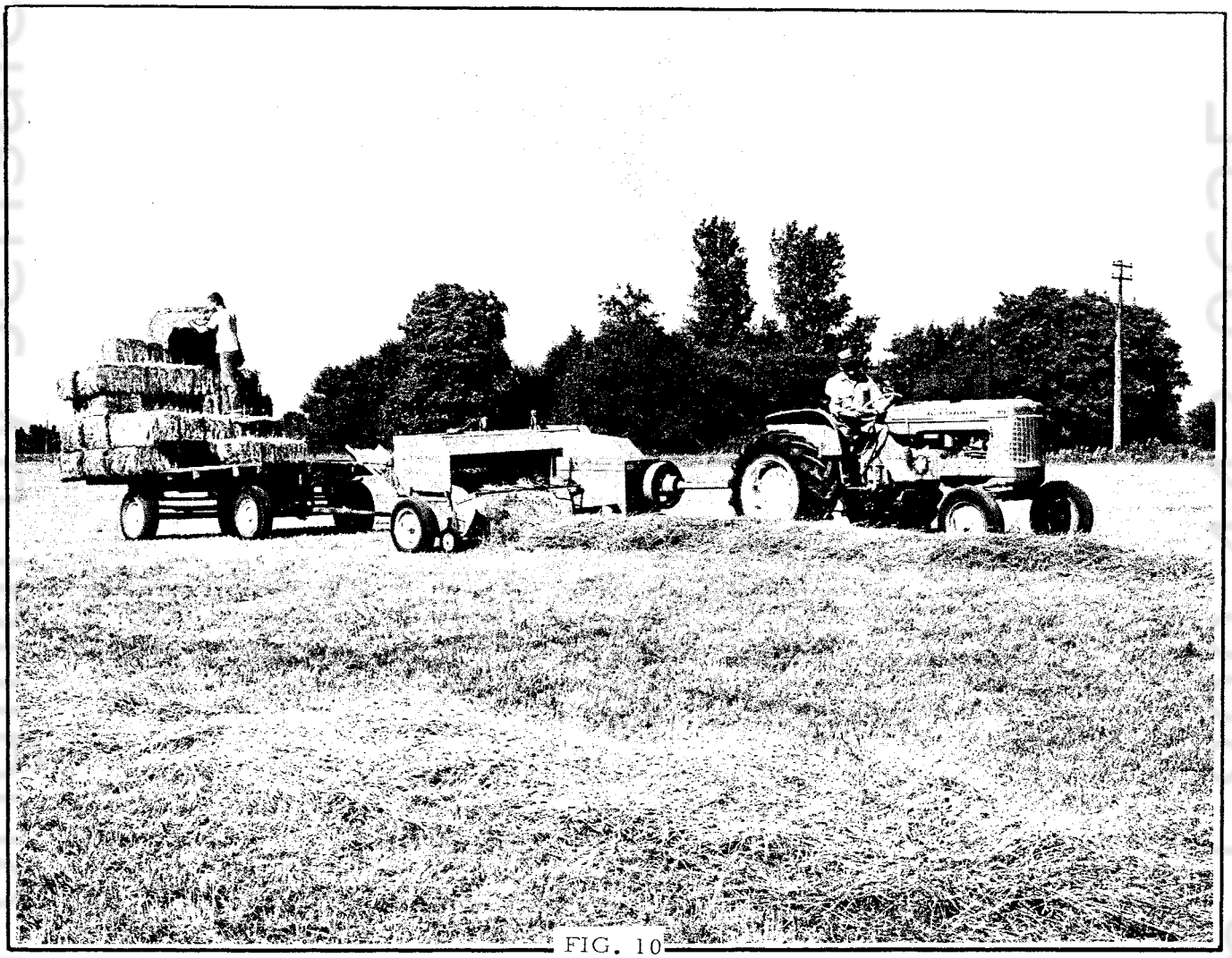


FIG. 10

PREPARING CROP FOR BALER (FIG. 10)

Raking is an important factor in proper baler performance. By following good raking practices, you will get crop in better condition, make better bales, and bale faster. The baler will be able to keep going at full capacity, and at the same time protect it against overload and strains which lead to unnecessary wear and breakdowns.

A side delivery type rake should be used. Raking and baling should be done in same direction as hay was mowed.

All of the hay should be raked or turned, as unraked hay does not cure properly, and is hard to pick-up. Better baling results can be obtained by making medium sized, uniform, single windrows. If hay is very light, making it impossible to get a medium sized, uniform, single windrow, then two swaths of the rake can be placed together.

NOTE: The hay must be cured before baling. The baler is only a packaging machine, and does not cure hay by placing it in a package.

OPERATION

The Baler should travel in the same direction as mower and rake when operating in field. Ample stuble length should be left during mowing operation to support crop for better curing, and better pick-up with baler.

Forward speed of tractor should be fast enough to keep baler working at full capacity, but not over-run windrow. P. T. O. speed of 540 R. P. M. should be maintained and tractor speed must be maintained with tractor transmission, not with engine throttle.

The windrow should contact the pick-up in the mid area for best feeding action. The twin feed rakes must be timed to enter crop and properly move it into baling chamber. The baling ram with knife shears off crop and moves it back in baling chamber under compression, where crop is held by haydogs and hay retainer while ram moves forward for another charge of the crop. As bale reaches the desired length, the star wheel trips knotters and ties the bale placing the twine in the twine grooves. These grooves protect twine from ground contact, and better aerate bottom side of bale while in field, also aids aeration in the stack.

With proper maintenance and operation, your baler should give trouble free baling for thousands of bales.

SAFETY PRECAUTIONS

Many hours of lost time and much suffering is caused by the failure to practice simple safety rules.

IT IS TOO LATE TO REMEMBER WHAT SHOULD HAVE BEEN DONE AFTER THE ACCIDENT HAS HAPPENED.

1. Do not attempt to oil or grease a machine or tractor while it is in operation.
2. Do not wear loose fitting clothing that may be blown into moving parts.
3. Keep all shields and guards in place.
4. Machinery should only be operated by those who are responsible and delegated to do so.
5. Only one person - the operator - should be permitted on tractor when tractor is in motion.
6. The rate of travel on hillsides or curves should be regulated so there is no danger of tipping.
7. Do not operate too close to the edge of a ditch or creek.
8. Do not leave the engine running unattended when anyone is adjusting or repairing a driven machine.
9. Provide a first aid kit. Treat all scratches, cuts, etc. with the proper antiseptic immediately.
10. Always stop P. T. O. before leaving driver's seat.
11. Never stand between tractor and drawn implement when hitching. Use an iron hook to handle drawbar.

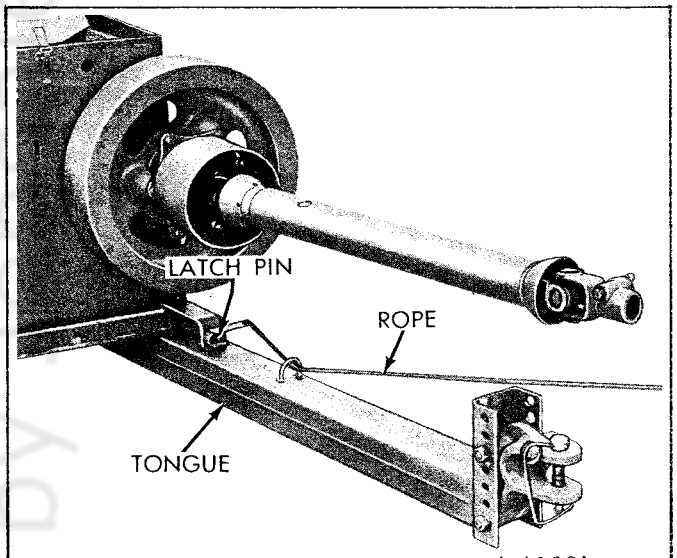


FIG. 11 (Operating Position) (302)

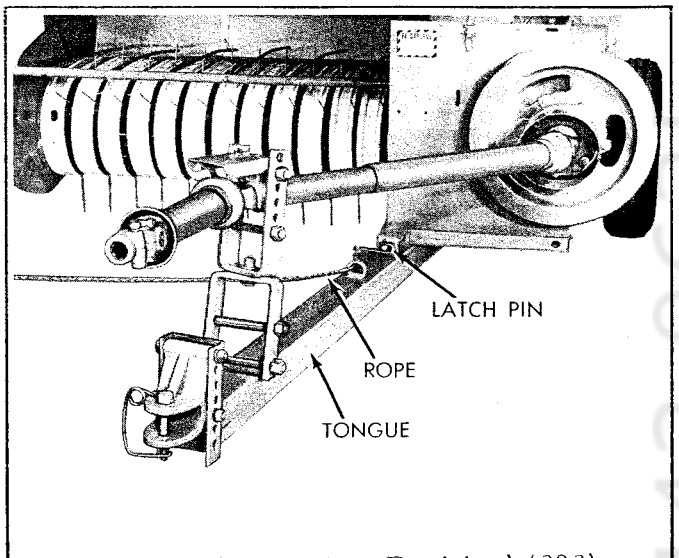


FIG. 12 (Transport Position) (303)

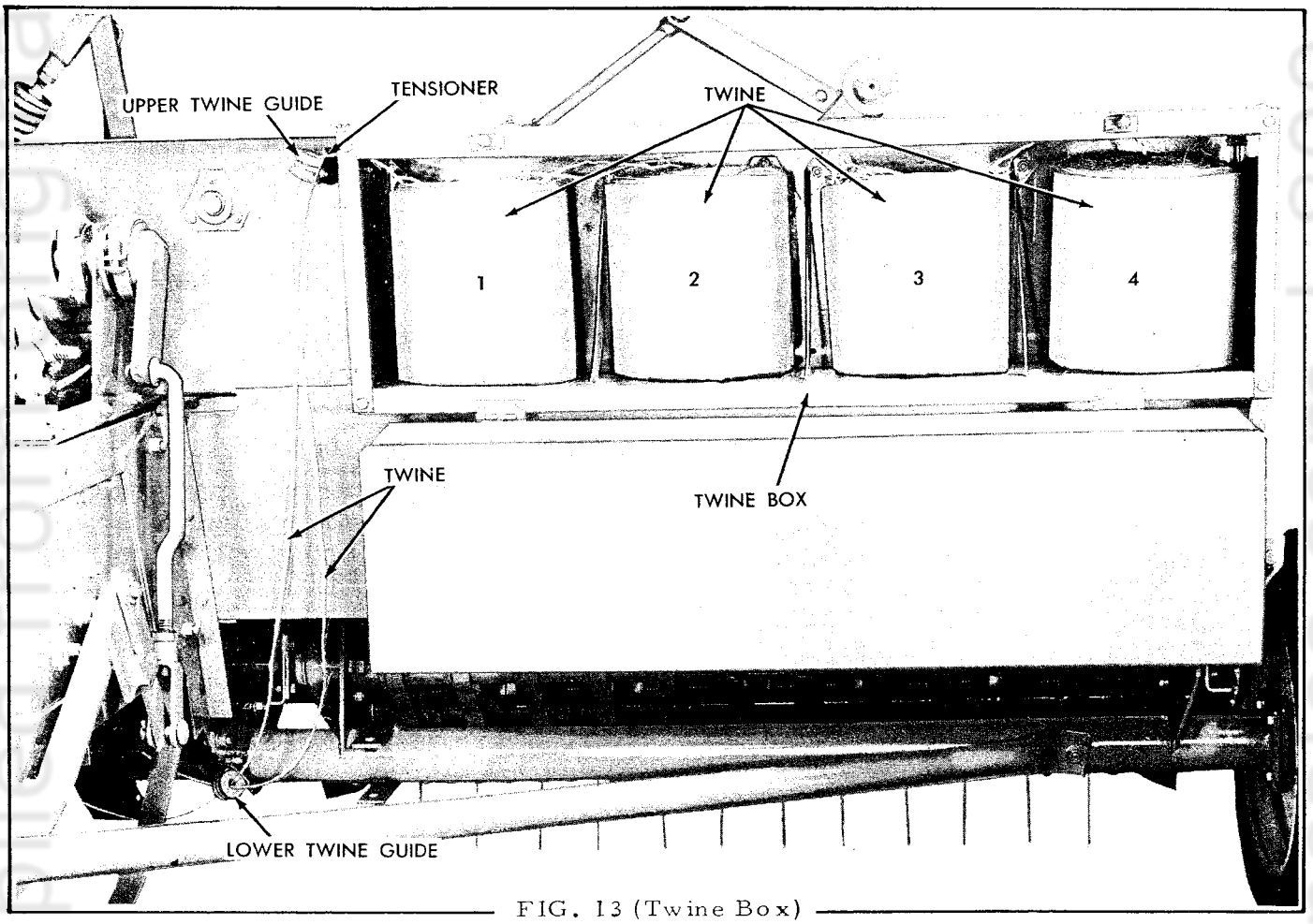


FIG. 13 (Twine Box)

FIG. 11 & 12

Lubricate machine as outlined in Lubrication Chart. Free up and oil all linkage, and other moving parts. Place tongue in operating position by pulling latch pin rope and moving tractor forward and to left.

Never attempt to operate machine without placing tongue in operating position.

FIG. 13, 14, 15

Place four balls of good quality baler twine in twine box. Tie the outside end of the first ball to

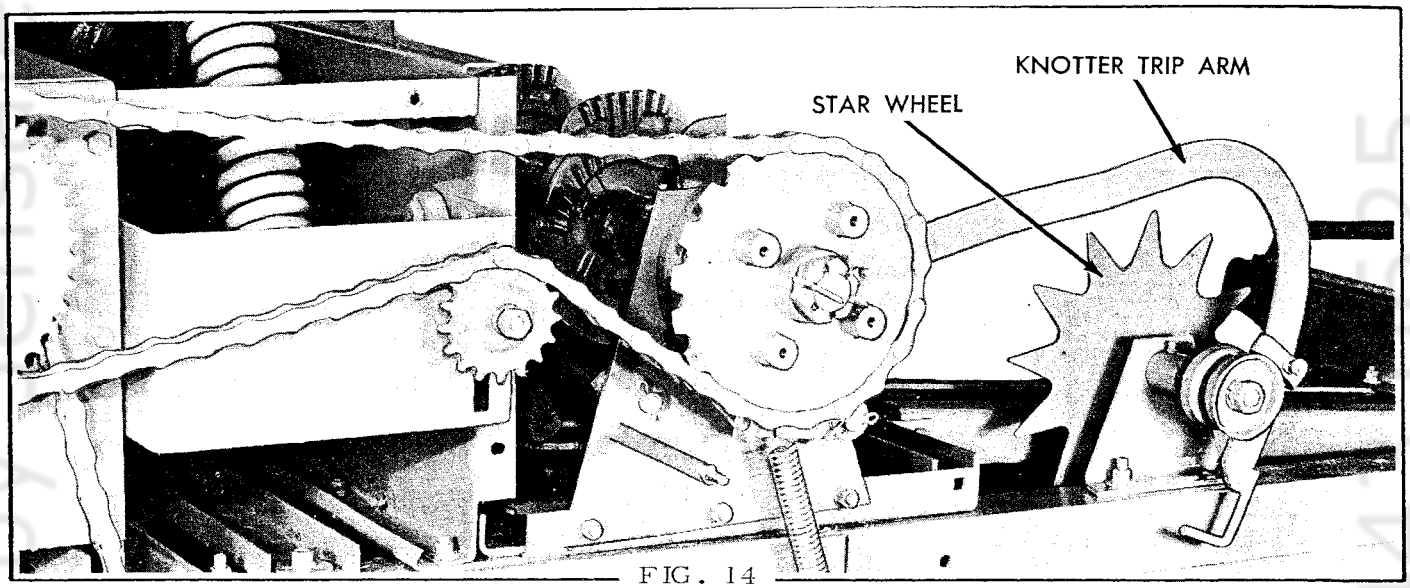


FIG. 14

inside end of the second ball, and outside end of third ball to inside end of fourth ball. Use a small firm knot to avoid snarling of twine. Pass twine from center of first ball between tensioner and upper and lower twine guides. Pass twine from center of third ball through guide above third ball, between tensioner and upper and lower twine guides.

Place a twine end through each needle twine guide and through eye of each needle, and tie loose ends of twine to needle shaft. Trip knotter by rotating star wheel counter-clockwise from L.H. side of baler. Rotate flywheel in direction of arrow on flywheel to permit needles to place twine in twine disc of each knotter. Remove loose ends of twine that were tied to needle shaft.

The needles and knotters have now been threaded and should be ready for field operation.

NOTE: Never rotate flywheel backwards after needles have entered baling chamber, or serious damage could result.

Place P.T.O. shaft of tractor in gear and operate baler slowly to make certain all moving parts are free to operate.

The tying mechanism can be operated with tractor power to check knotters by pulling both strands of twine to rear and tripping the needles.

NOTE: Always pull back on twine when checking tying mechanism to prevent twine from wrapping around and damaging bill hook assembly. Knotter assembly should always be threaded with twine before operating, to prevent damage to bill hook assembly.

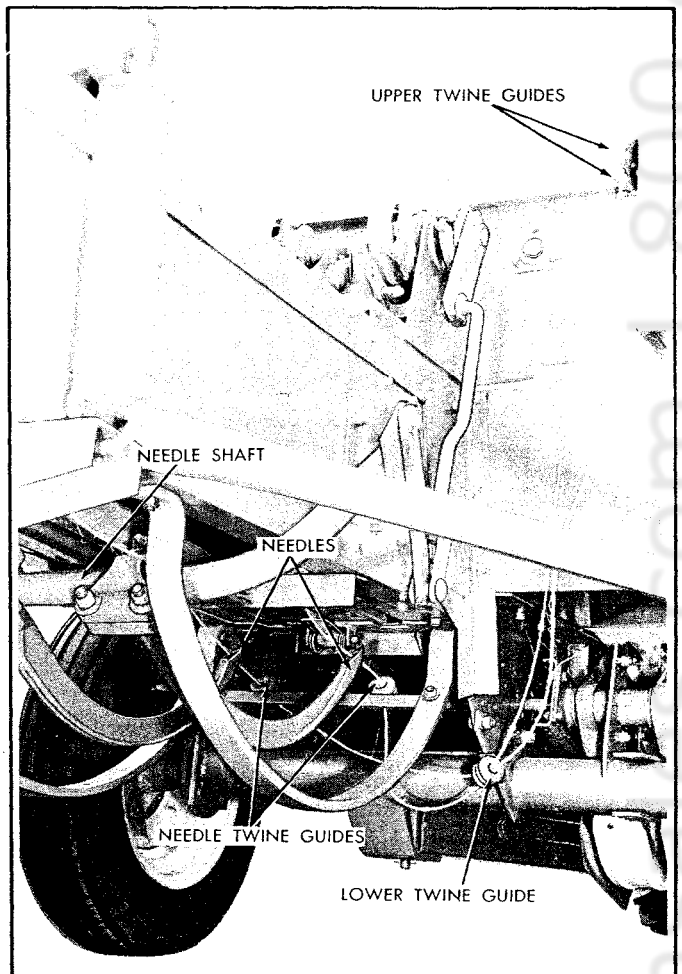


FIG. 15

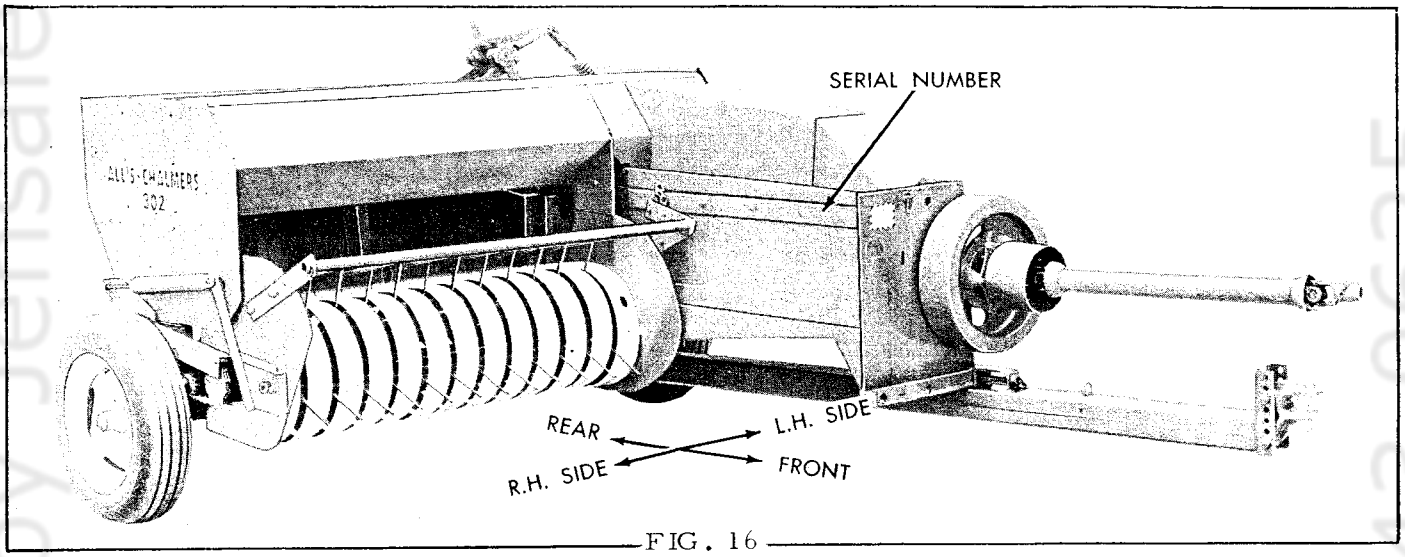


FIG. 16

Place P.T.O. in gear. Place tractor in a forward gear (new operators use low gear), and lower pick-up to operating position. Drive around field in same direction as hay was mowed and raked with windrow in certer of pick-up.

After making a few bales, the operator should check to see if they are of desired length and density.

After becoming accustomed to operation of baler, The operator should travel at a speed that will let you do a clean job of picking up windrow, and feed it to baler in a steady uniform flow.

Speeds too fast will slug and overload baler. Speeds too slow will not keep baler going at full capacity, and could cause poorly formed bales.

FIG. 16

The L.H. and R.H. side of unit is determined by facing direction of travel.

The serial number is located at front of R.H. upper bale chamber channel.

ADJUSTMENTS

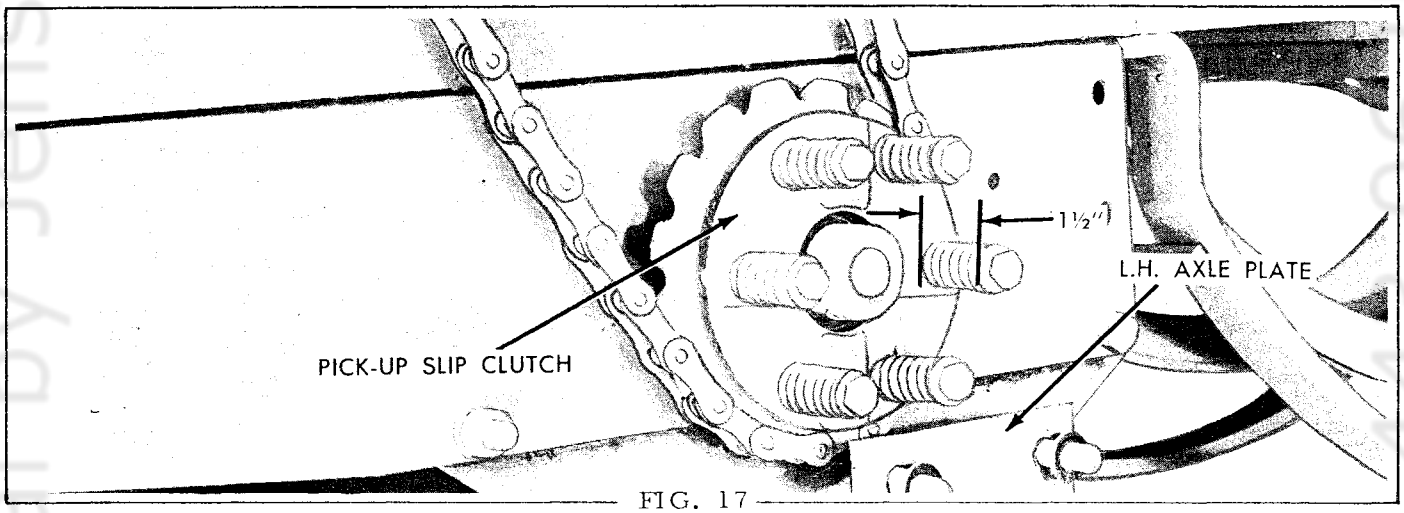


FIG. 17

The following adjustments are merely starting points for normal and average conditions. Some deviations may have to be made to meet your specific crop conditions.

PICK-UP CAM (FIG. 18)

The pick-up cam can be adjusted by loosening four bolts and rotating cam to desired position to change angle of disappearance of pick-up fingers as they leave top rear of stripper.

The cam is adjusted in mid-position when leaving factory and appears to function most satisfactorily for most crop conditions in this mid-position.

There may be certain crop conditions when pick-up cam must be readjusted to do a better job of picking up crop and delivering it into feed house.

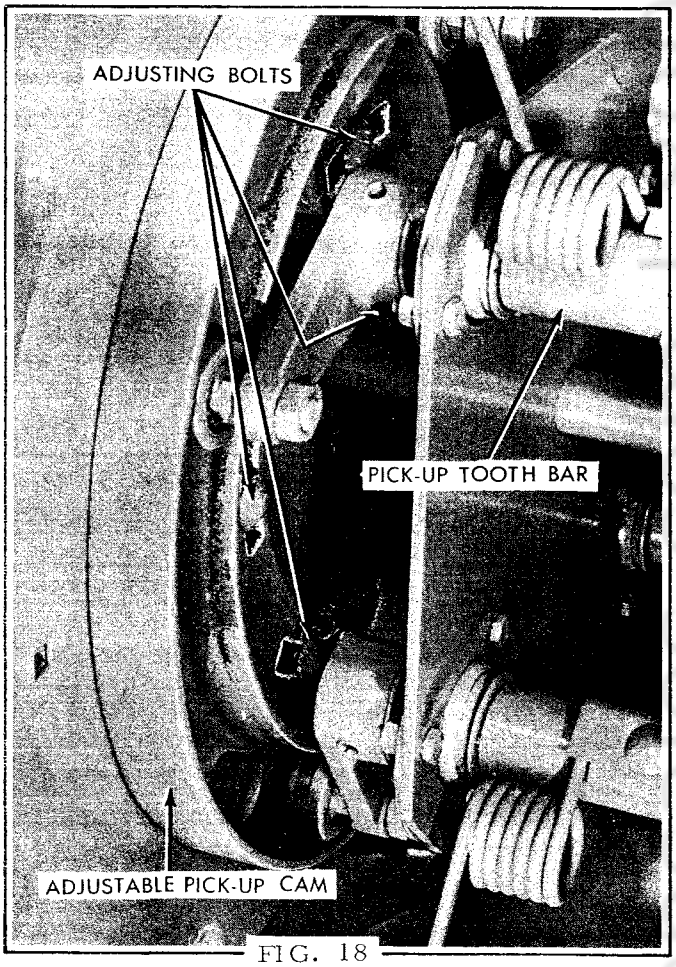


FIG. 18

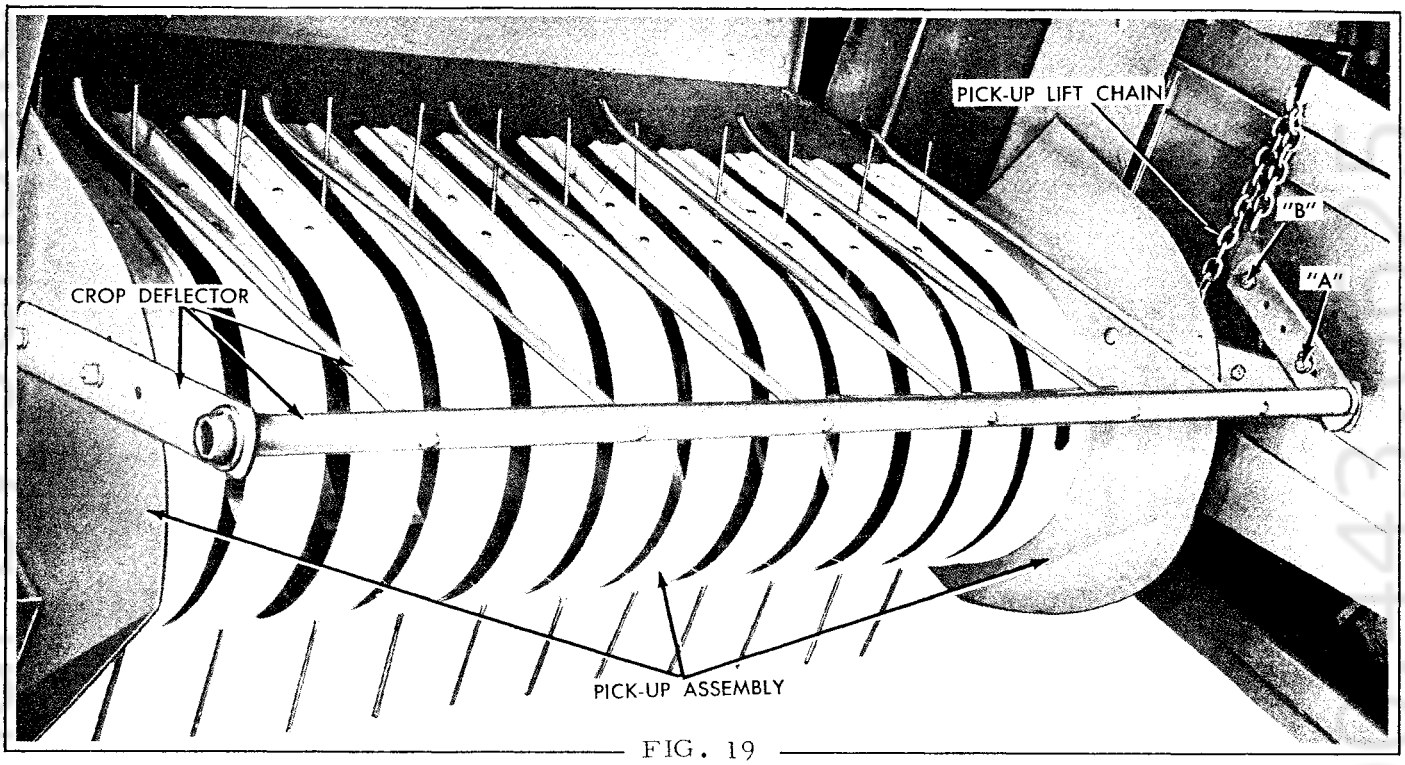


FIG. 19

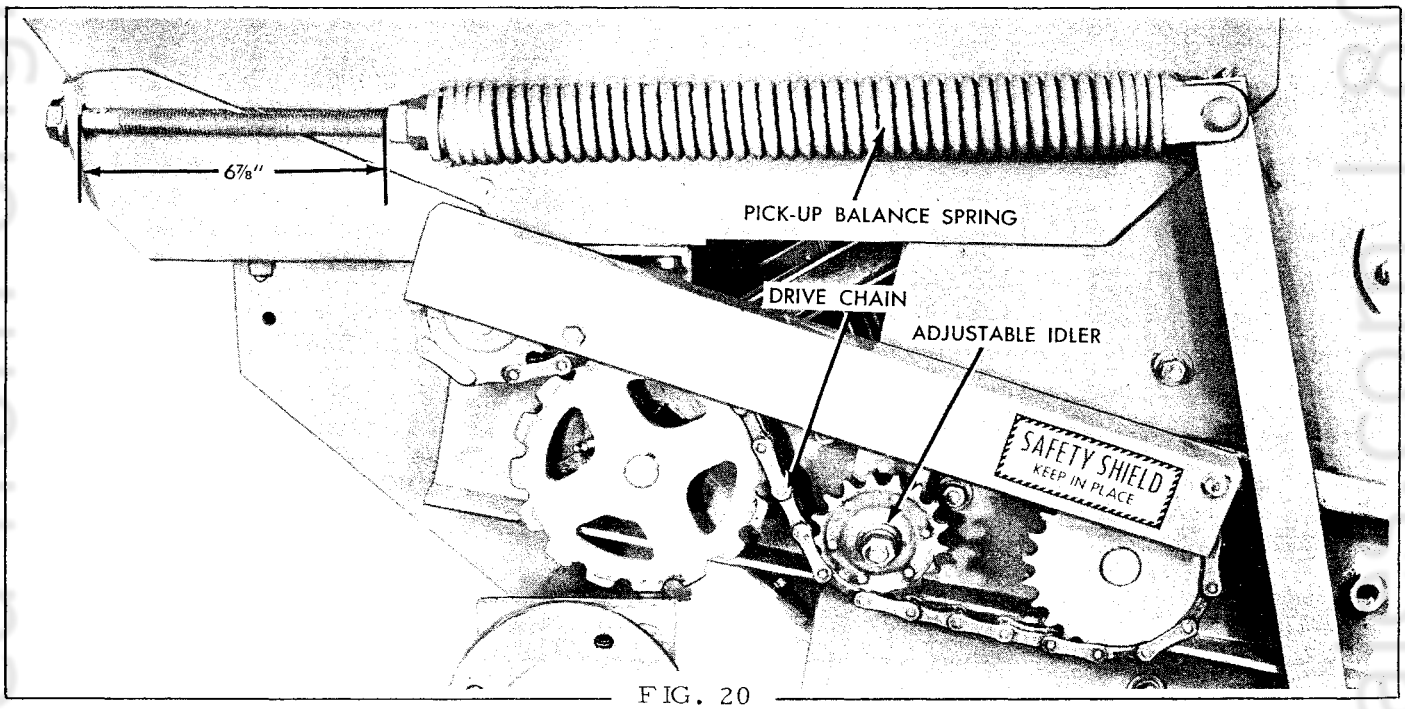


FIG. 20

PICK-UP (FIG. 19)

The height of Pick-Up is adjustable up or down by relocating pick-up lift chain on hook. The pick-up should be low enough to pick-up windrow without contacting ground. The crop deflector has three positions to place more or less pressure on material as it passes over pick-up and on into feed house. More or less pressure can be placed on crop deflector by adjusting bolt "A". Spring anchor bolt "B" can also be moved to obtain various down pressures.

FIG. 17, 20

The pick-up balance spring should be adjusted to permit pick-up to float. A 6-7/8" dimension should be obtained from front of bolt anchor to locknut. The pick-up slip clutch has six springs and each spring should be adjusted to obtain 1-1/2" overall spring length. The drive chains must be kept tight with idlers.

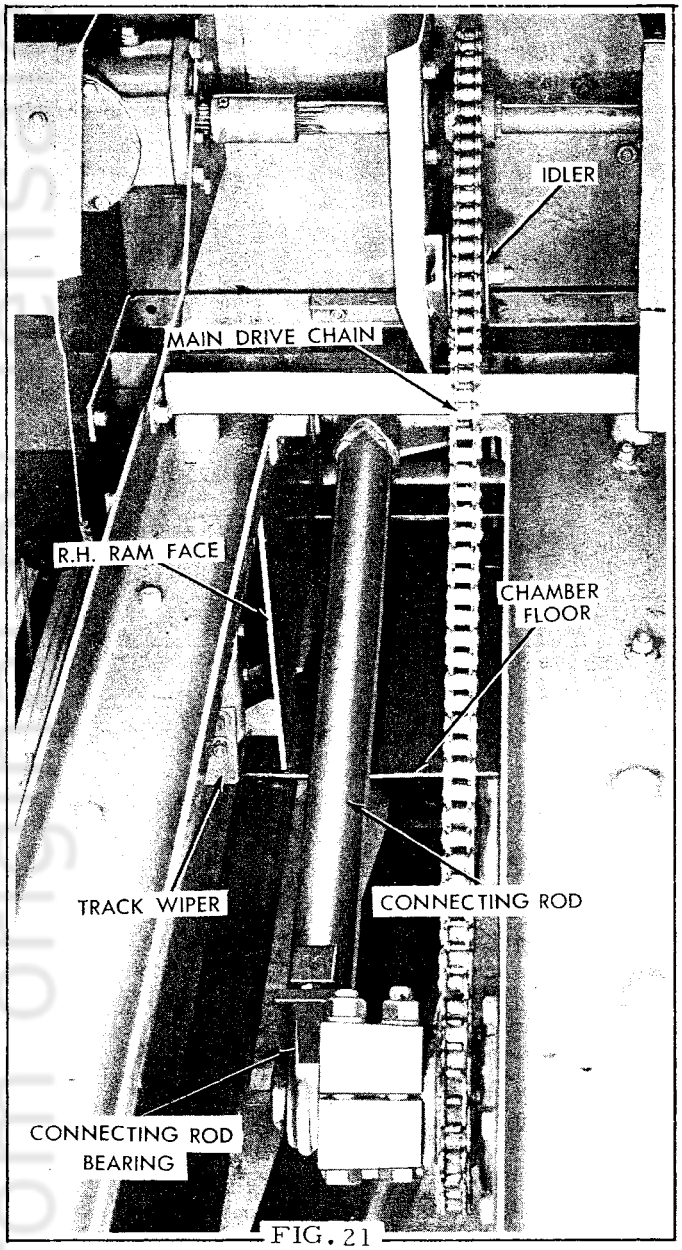


FIG. 21

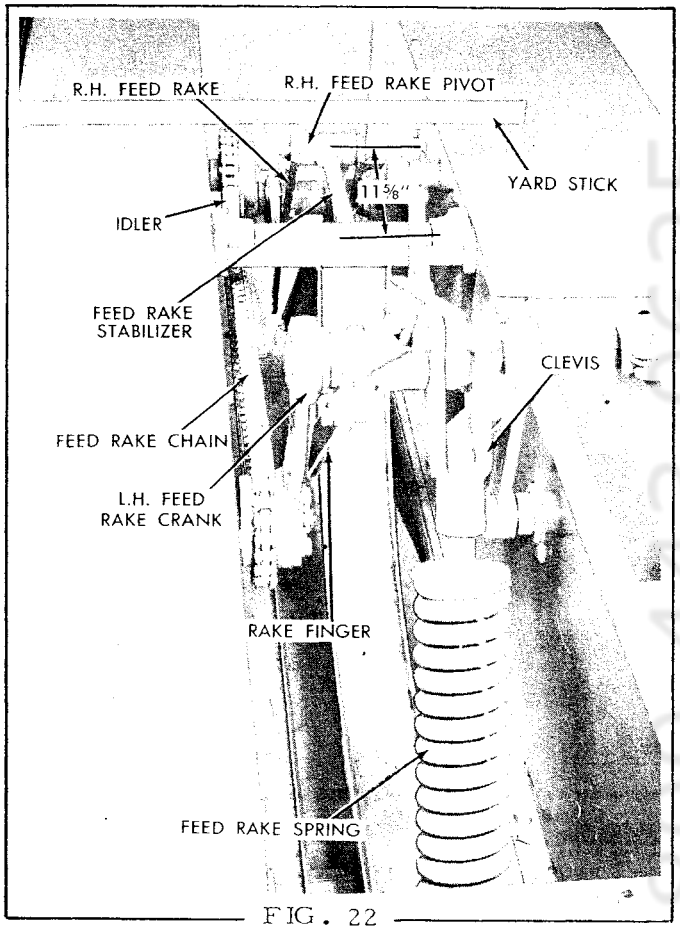


FIG. 22

TIMING OF RAM, TWIN FEED RAKES AND NEEDLES

FIG. 21 & 22

To time Twin Feed Rakes to ram, remove main drive chain. Rotate flywheel in direction of arrow until R.H. ram face and front of chamber floor are in alignment with ram on compression stroke. Place L.H. feed rake crank up in as near vertical position as possible with rake fingers toward R.H. side. Install main drive chain over top of sprockets connecting chain on bottom side and tighten chain very tight with idler.

NOTE: Sometimes better feeding action can be obtained by timing L.H. feed rake crank one tooth to left from vertical position, but never more than one tooth. Always turn machine over by hand to check L.H. feed rake fingers in relation to ram. With feed rake chain removed, position R.H. feed rake so that R.H. feed rake pivot is as near flush with top of feed housing as possible, as it first enters feed housing, making certain rake fingers are toward R.H. side.

FIG. 23

R.H. feed rake is timed at factory so it crosses L.H. feed rake in feed housing as shown in photo. The factory setting is as close to above mentioned method of setting feed rakes as possible.

FIG. 22

Install feed rake drive chain around sprockets from bottom side and tighten with idler to remove all slack.

The R.H. feed rake can be adjusted to each tooth on its driven sprocket to meet various crop conditions. Sometimes in short crops such as straw the R.H. feed rake gives better feeding action when it enters crop same time as L.H. feed rake. As a starting point the feed rake stabilizer should be adjusted so that a dimension of 11-5/8" is obtained from center to center of the two pivots. The feed rake spring should measure 10-1/4" overall spring length.

The clevis located on upper end of feed rake spring rod can be adjusted to give L.H. feed rake more or less movement into bale chamber to help

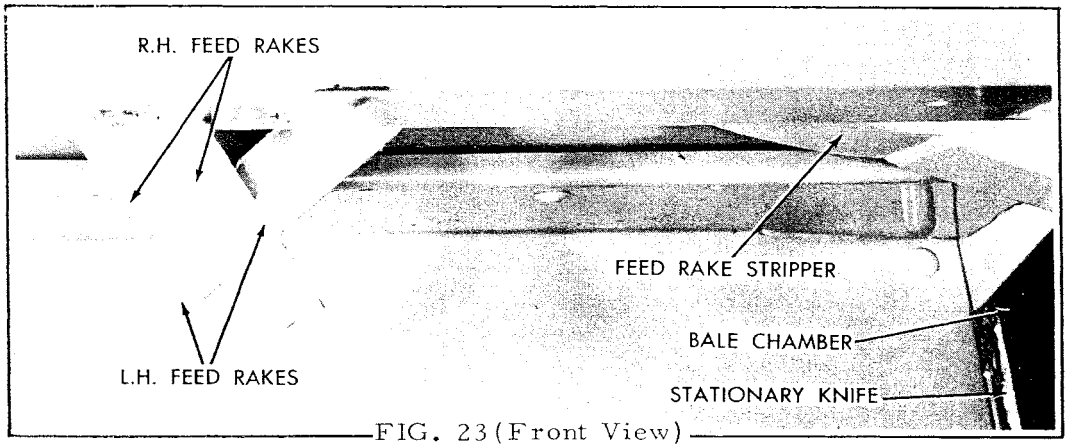


FIG. 23 (Front View)

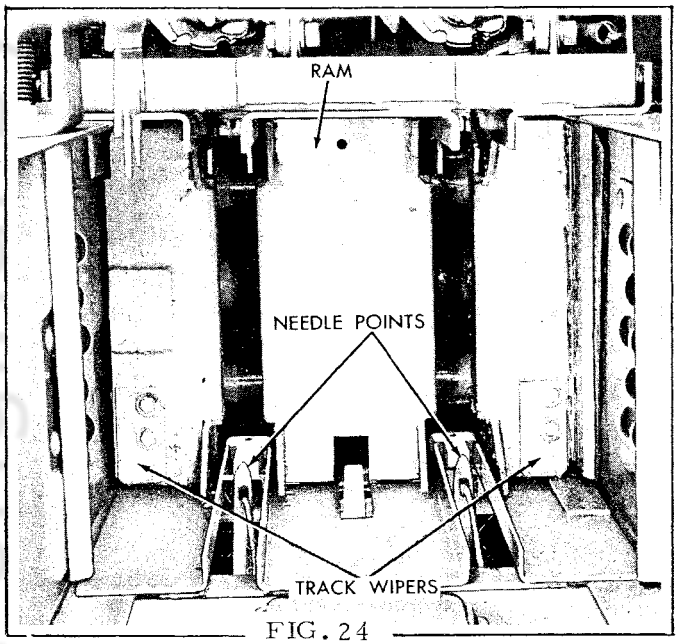


FIG. 24

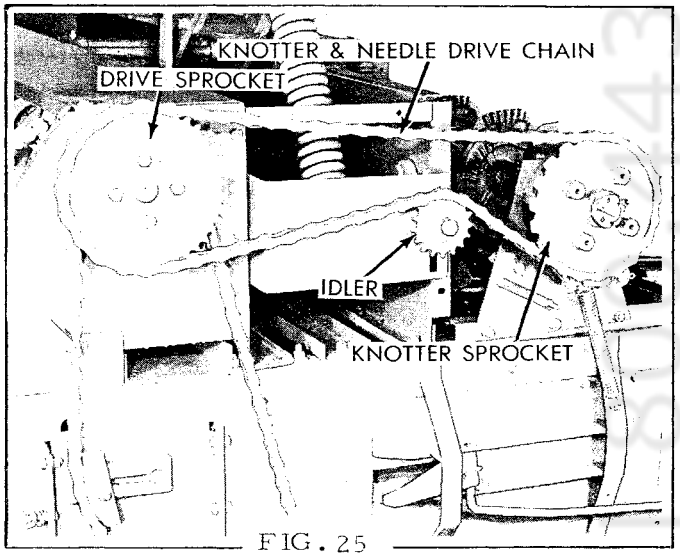


FIG. 25

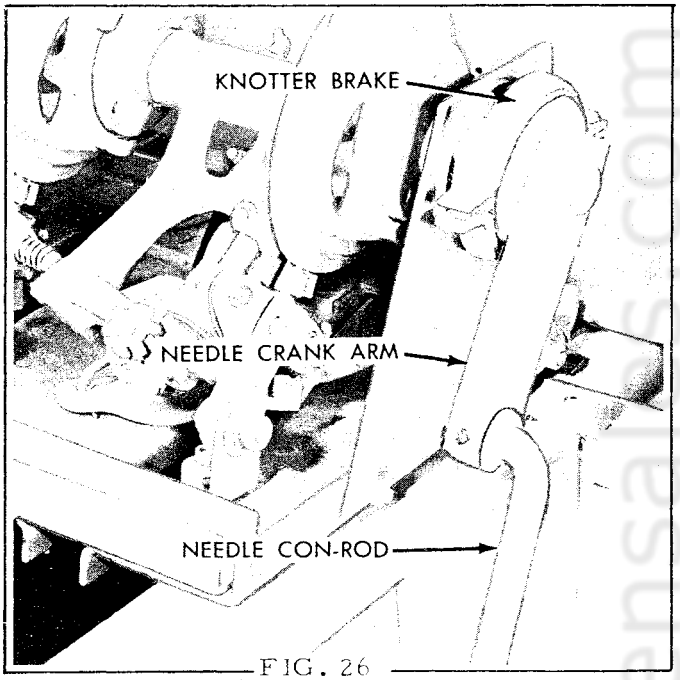


FIG. 26

form a more desirable bale. As a starting point, clevis should be located about midway on threaded area of upper feed rake spring rod.

FIG. 21 & 24

The four track wipers should be adjusted down while over tracks to keep tracks clear.

FIG. 21, 24, 25, 26

With R.H. ram face and front of chamber floor still in slignment, remove knotter and needle drive chain and position needles in bale chamber so that point of needles are flush with top of bale groove former. Needle crank arm must be down and rotating to rear of machine. Install knotter and needle drive chain placing it over knotter sprocket, rotating sprocket until contacting clutch dog and keep chain tight as it is placed over drive sprocket. If drive chain cannot be installed with ram in this position, move ram into bale chamber slightly to permit chain installation. Remove all slack from chain with idler. Turn unit over manually to check for proper timing.

NOTE: The connecting rod bearing must be free in block to permit connecting rod to align and should be checked once each season. This bearing and block should be removed from connecting rod by removing two capscrews and then make certain bearing is free in bearing block. Free and lubricate if necessary.

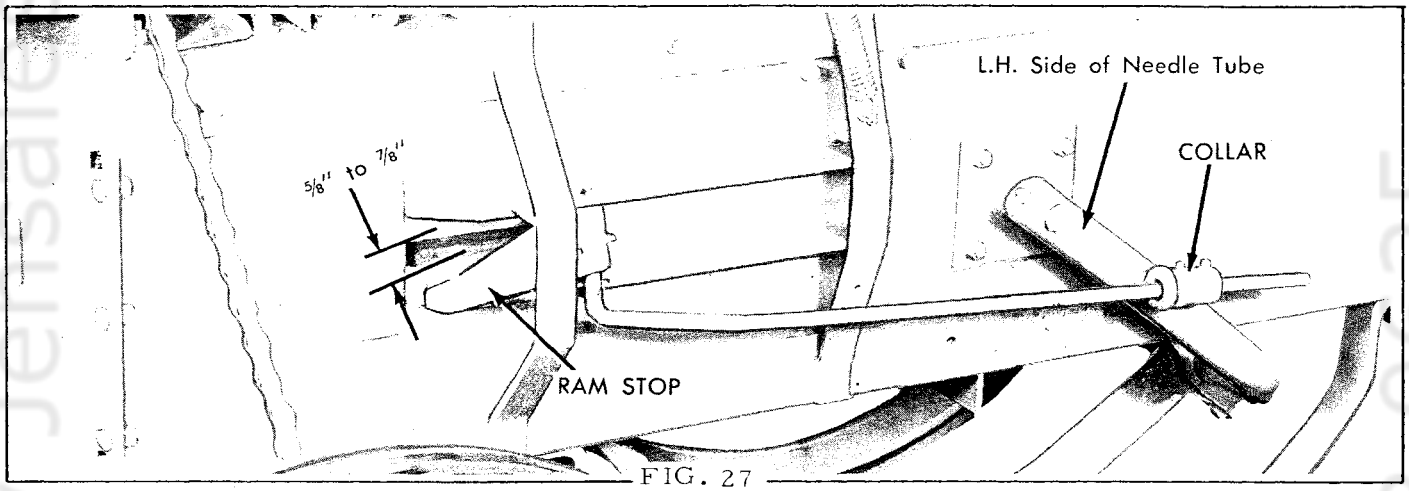


FIG. 27

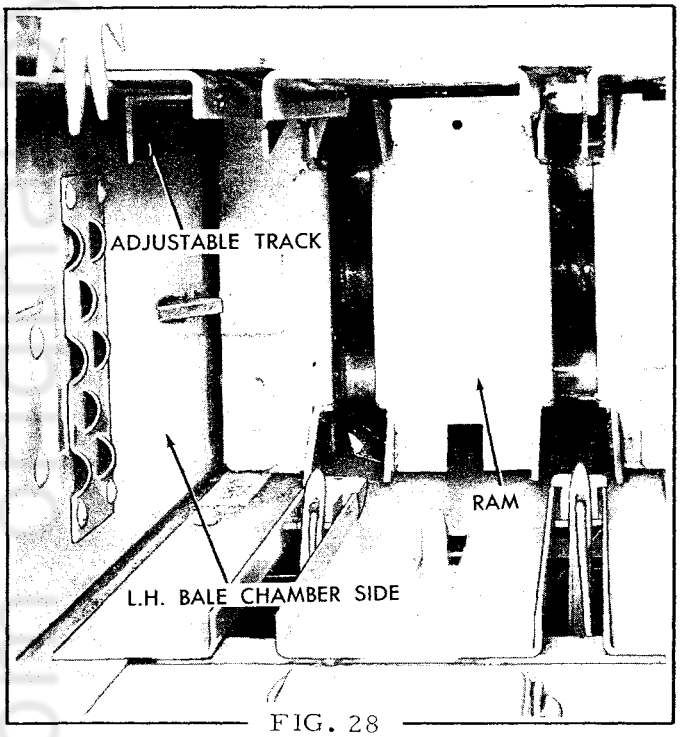


FIG. 28

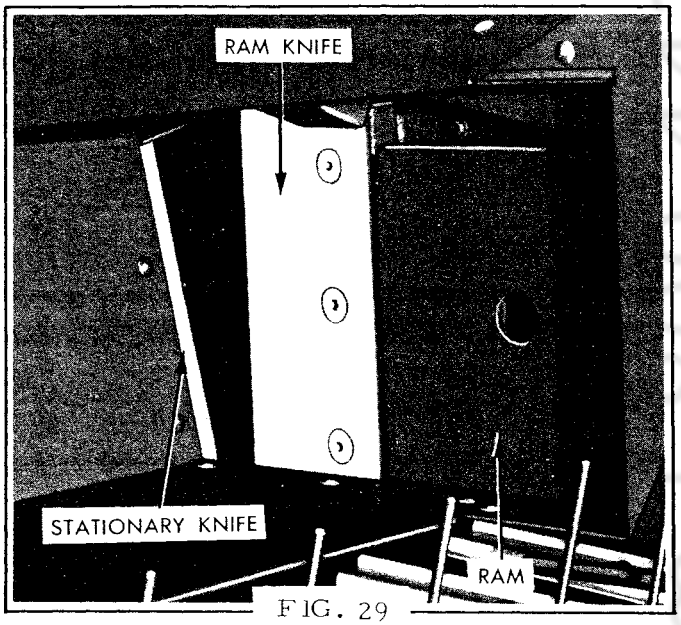


FIG. 29

The adjustment is made by moving collar on rear of ram safety stop control rod.

RAM SAFETY STOP (FIG. 27)

The Ram Safety Stop protects the needles from damage by ram is the needles enter the baling chamber too soon, or remain there too long. The ram safety stop enters baling chamber at same time as needles. When needles are withdrawn, a lug located on L.H. side of needle tube contacts a collar on ram safety stop control rod which pulls it out of baling chamber.

Should the ram strike ram safety stop in baling chamber, it will shear bolt in flywheel and help prevent damage to baler.

The inner front point of ram safety stop should be 5/8" to 7/8" from side of baling chamber when needles are in home position.

RAM AND RAM KNIFE (FIG. 28, 29, 30, 31)

The Baling Ram is fitted with seven steel rollers which run on ball bearings, pre-packed with grease and sealed for life. One roller and two ram slides are adjustable when re-setting of ram is required.

The bottom set of rollers on R.H. side bear on a steel track, which is bolted to chamber floor, and R.H. side rollers also bear upon a steel track bolted to chamber side. The L.H. side of ram runs on two side rollers, which bear on an adjustable steel track fitted to top L.H. side of bale chamber, and one adjustable roller on bottom.

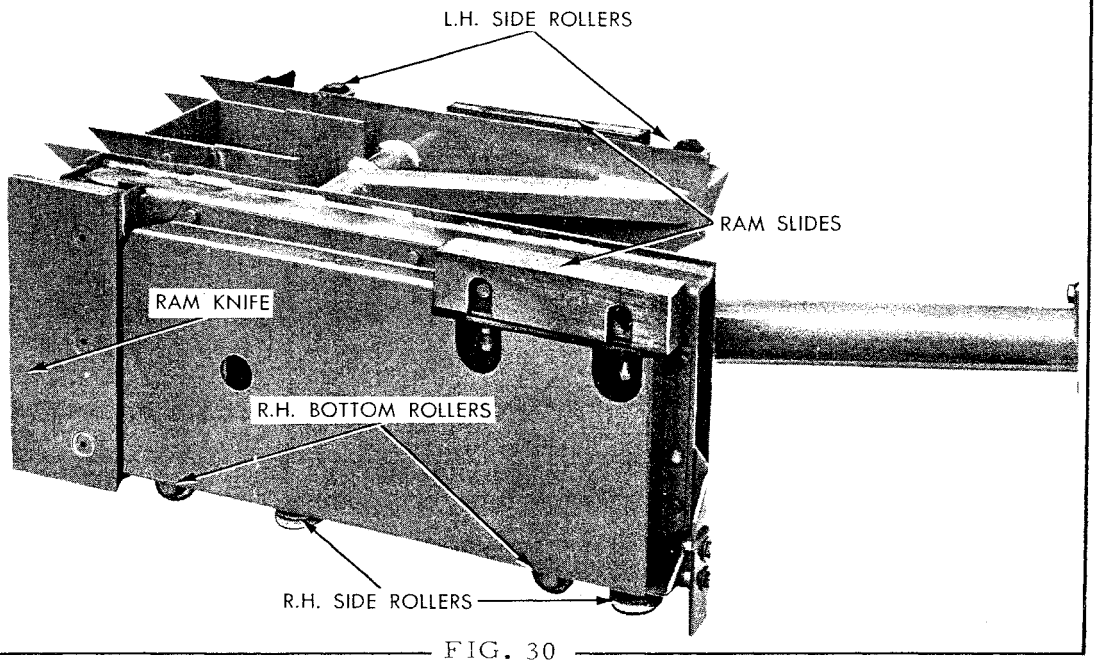


FIG. 30

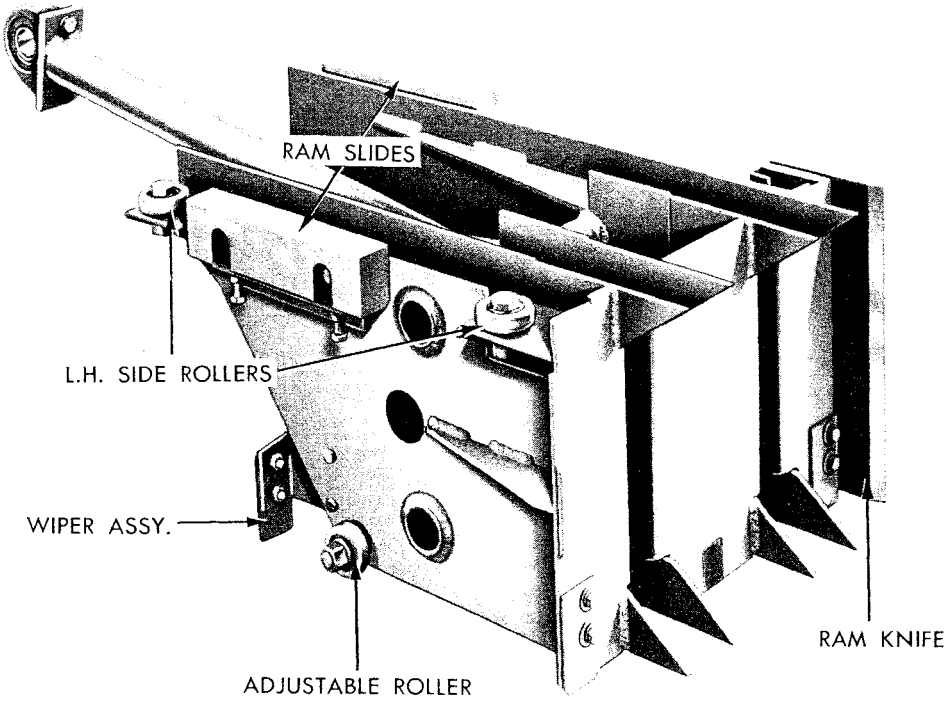


FIG. 31

The ram must be adjusted in bale chamber to where ram knife and stationary knife are parallel to each other. There should be from .005" clearance to not more than .032" clearance between ram knife and stationary knife.

The clearance between ram knife and stationary knife should never exceed .032", or undue strain will be placed on driving components due to jamming of crop between ram knife and stationary knife. The ram knife must always be kept sharp to prevent jamming. A spare ram knife should be carried to avoid any delay. When the clearance between ram knife and stationary knife exceeds .032", the ram knife must be shimmed out.

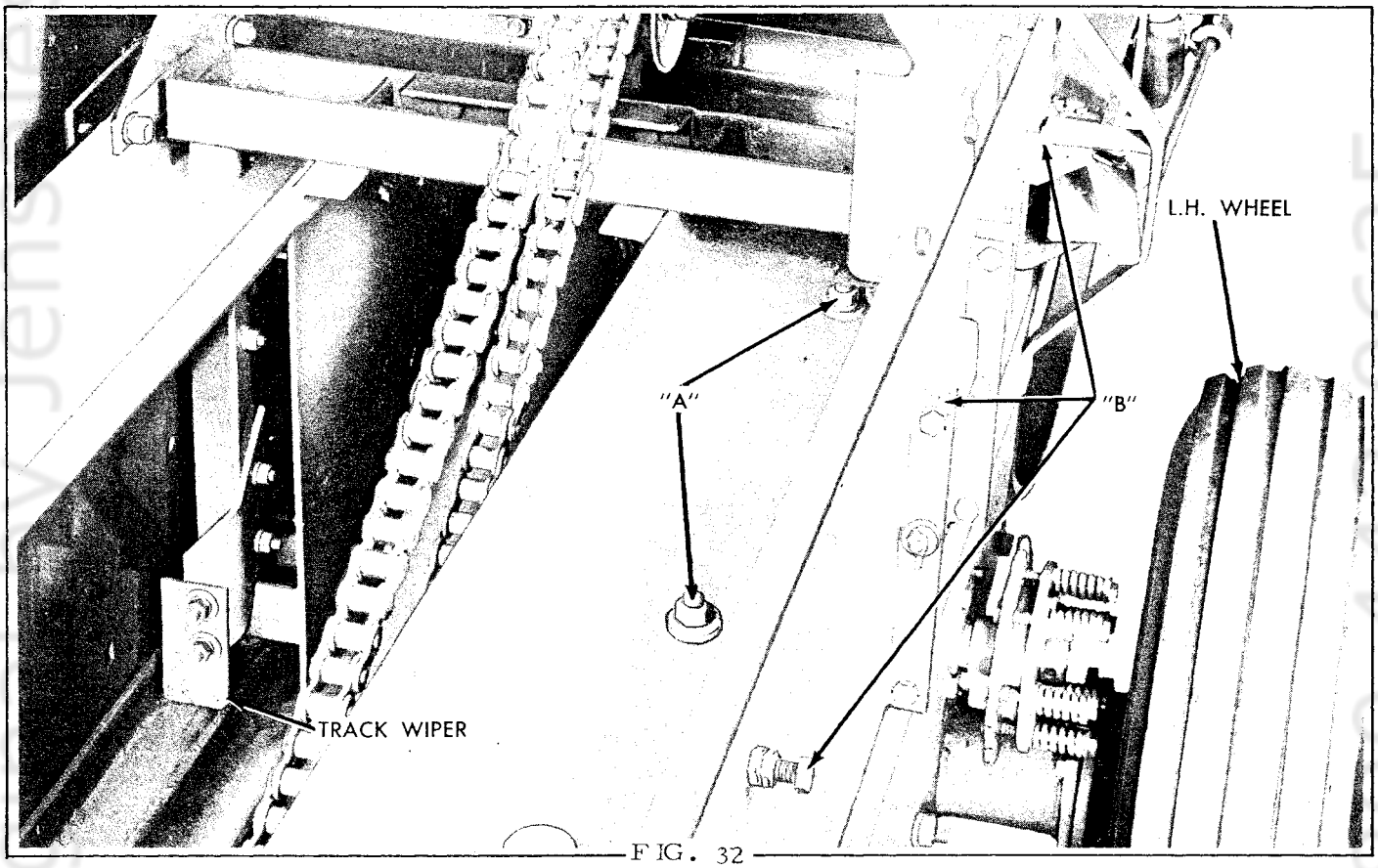


FIG. 32

RAM KNIFE ADJUSTMENT
(FIG. 32, 33, 34, 35)

The ram must be adjusted in bale chamber so that ram knife and stationary knife are parallel to eachother and have proper operating clearance. Adjust ram as follows:

Loosen the four track wipers. Loosen the eccentric on roller on L.H. front lower corner of ram. Loosen ram slides. Make certain ram is pushed over to R.H. side of bale chamber so that R.H. side rollers are against R.H. lower track assembly.

Loosen (not too loose) the four track attaching bolts "A" (only two shown) located at top of bale chamber, and adjust the four pressure screws "B" (only three shown) in on bale chamber side until knives are parallel to each other. Tighten bolts "A" and lock screws "B".

Adjust eccentric on roller on L.H. front lower corner of ram to lightly contact steel track. Adjust ram slides up until they slightly contact upper tracks. The R.H. side rollers must contact steel track before and after ram has been paralleled in bale chamber. If necessary, shim ram knife to obtain from .005" to .032" clearance between ram knife and stationary knife. The ram knife should never contact R.H. lower track assembly. Readjust track wipers.

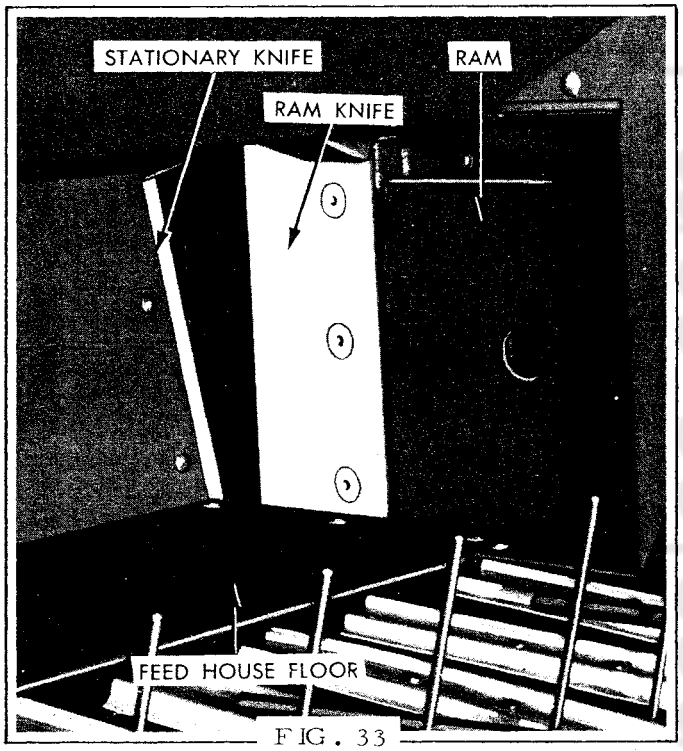


FIG. 33

The stationary knife should be flush or not extend more than .015" past the L.H. edge of the R.H. lower track assembly.

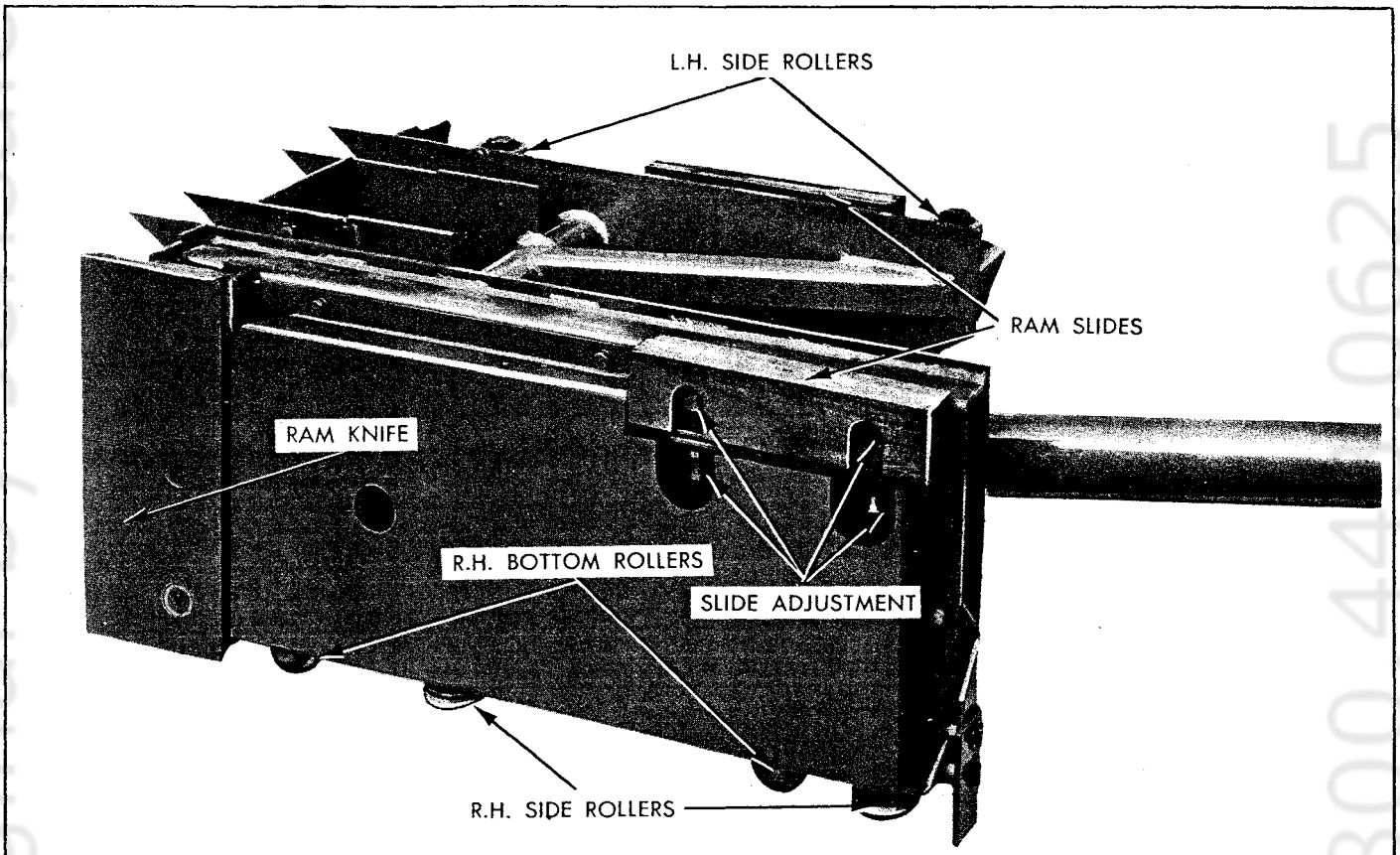


FIG. 34

FIG. 33

The ram knife is removed by turning flywheel by hand until knife appears in feed opening and remove the three Allen countersunk screws which hold it to ram.

The stationary knife has two cutting edges and is reversible. The ram and stationary knives can both be sharpened. When sharpening, maintain the original bevel on knives.

RAM SLIDES (FIG. 34 & 35)

The ram slides located on top side of ram are adjustable to remove rocking effect of ram as wear occurs. The L.H. slide is adjustable through panel opening in bale chamber side (remove panel). The R.H. slide is adjustable through feed house opening. Locate ram at these positions to make adjustment.

NOTE: There are four capscrews per slide and if slides are adjusted too close to top of bale chamber, bale chamber top will get hot during operation.

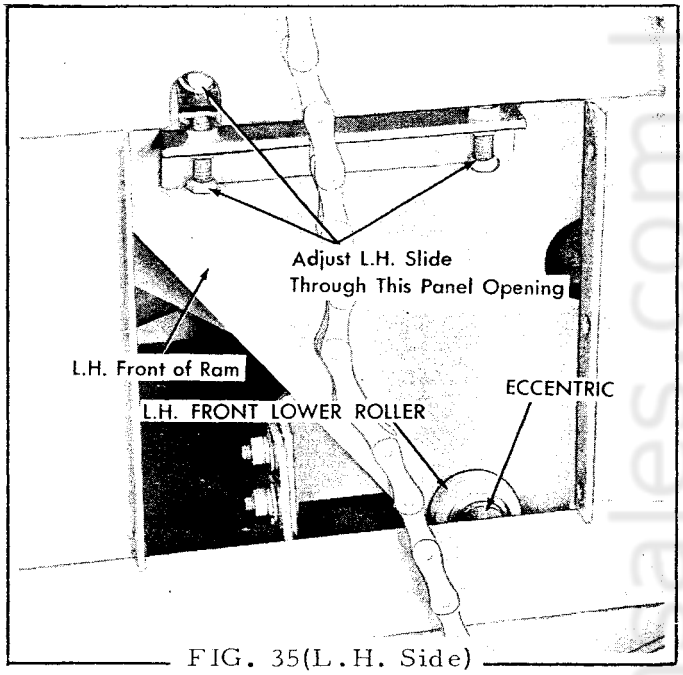


FIG. 35(L.H. Side)

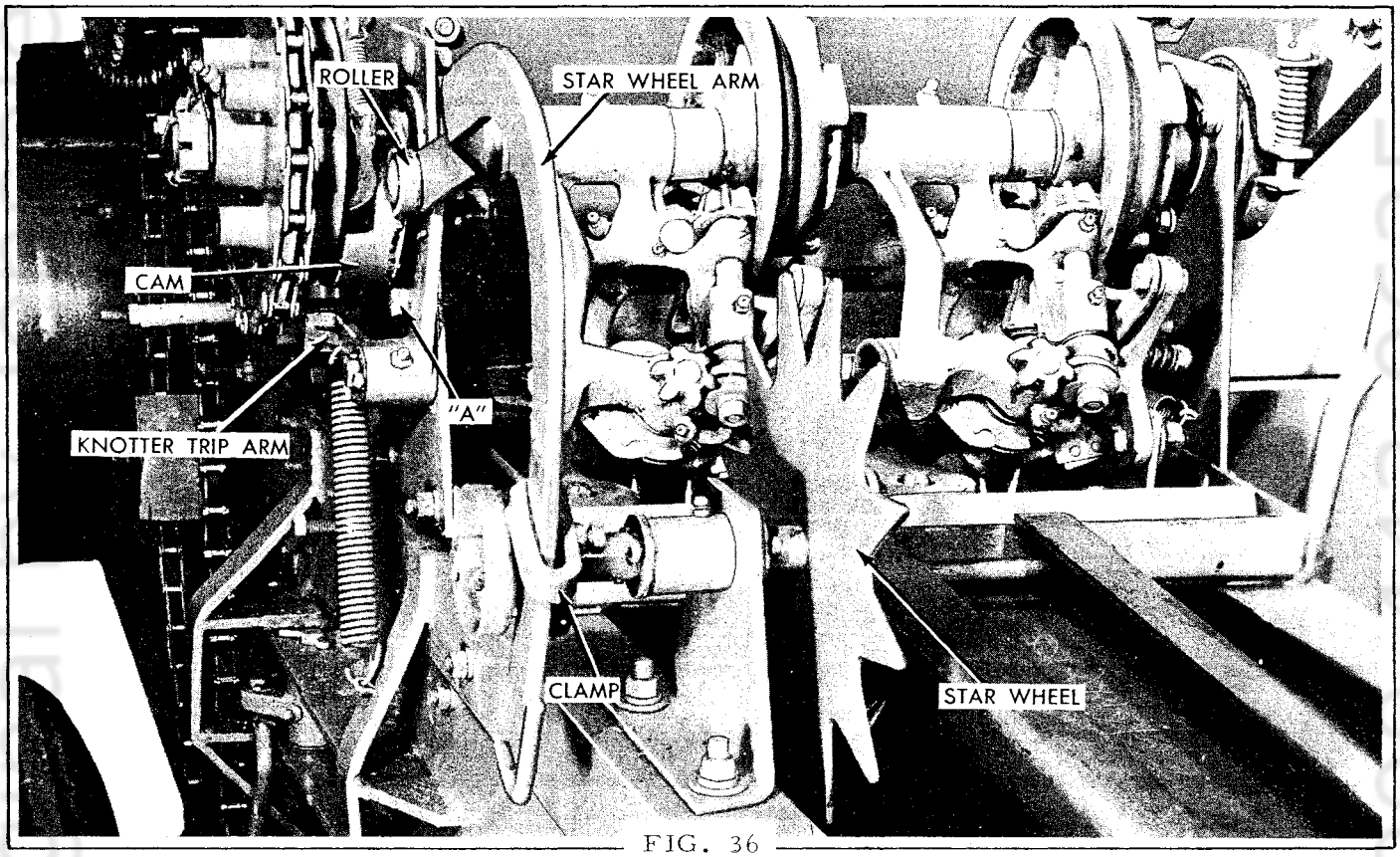


FIG. 36

WEIGHT AND LENGTH OF BALE ADJUSTMENT

FIG. 37

The weight of bale is regulated by adjusting the spring loaded compression bars. By turning cranks at rear of bale chamber, weight of bale can be changed. For normal conditions, cranks should be turned down into spring until 5-3/4" is obtained between bottom side of washer on crank and bottom side of plug in spring.

If after baling several bales it is found that tension is not sufficient, more pressure may be applied.

FIG. 36

Bale length can be varied by changing position of clamp on star wheel arm. If length of bale is too short, set clamp higher on star wheel arm; if length of bale is too long, set clamp lower on star wheel arm.

The star wheel should be adjusted on bale chamber to where there is just clearance between star wheel drive and star wheel arm when roller is on high point of cam as shown.

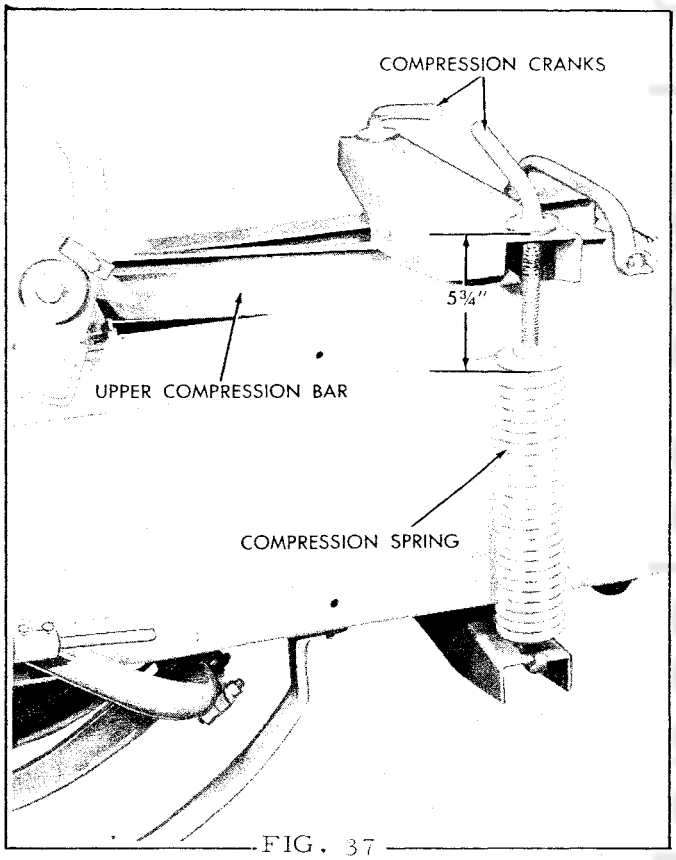


FIG. 37

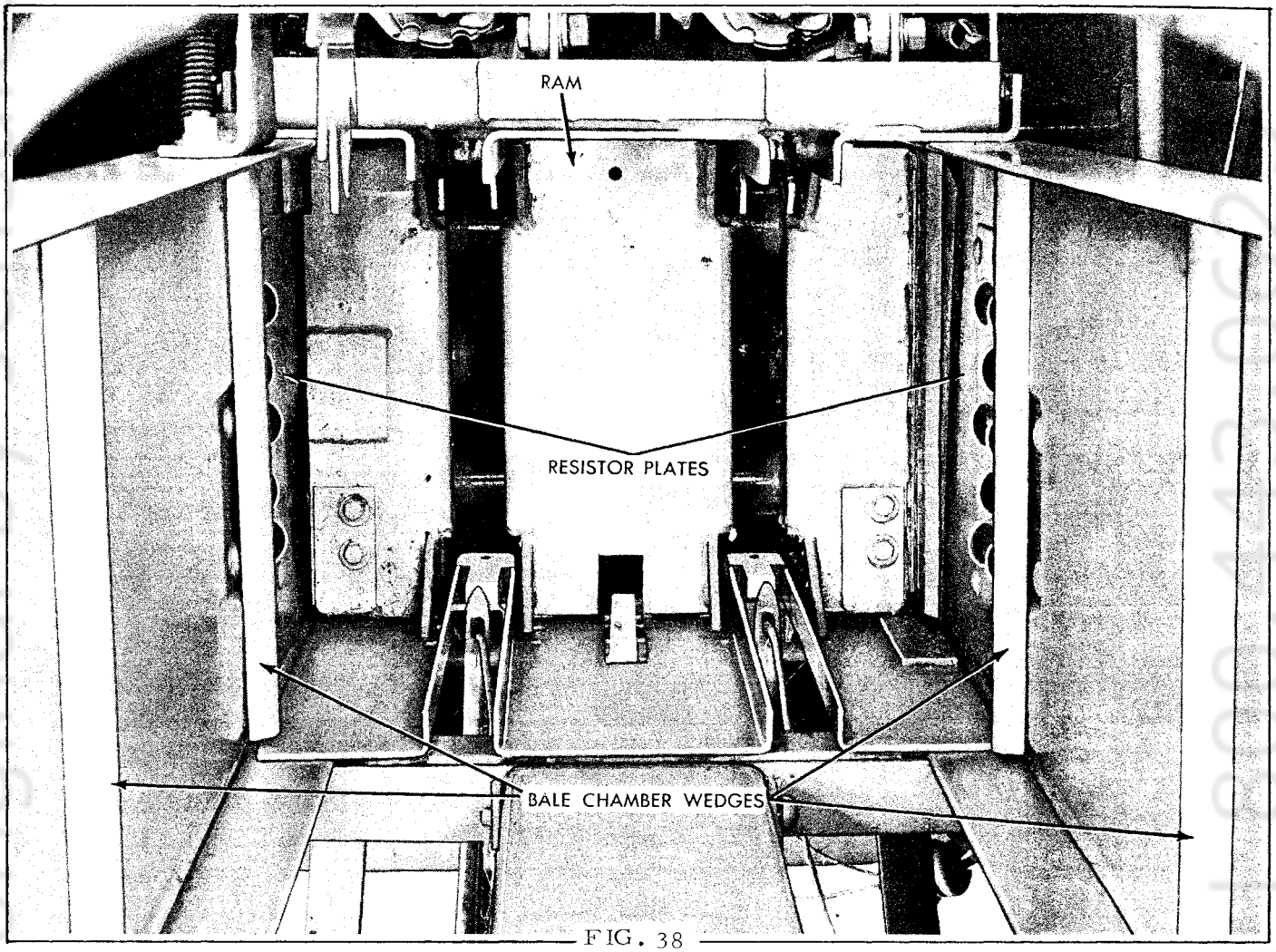


FIG. 38

RESISTOR PLATES & BALE CHAMBER WEDGES

FIG. 38

The Baler is shipped with a pair of resistor plates and a pair of bale chamber wedges.

The bale chamber wedges allow a better bale to be formed when baling straw or other light fluffy material. They also reduce amount of pressure required on compression bars to make a bale of desired weight.

NOTE: The bale chamber is drilled for a second pair of bale chamber wedges, which can be purchased from Parts and bolted in place just to rear of resistor plates if and when they are needed. The bale chamber wedges should be bolted in place directly behind resistor plates when baling dry brushy material to relieve pressure on needles as knots are being tied.

KNOTTER TRIP ADJUSTMENT

FIG. 36, 39

The bolt and spacer at "A" must be adjusted forward or back so that knotter trip arm clears trip lever by 1/16" when knotter trip arm trips.

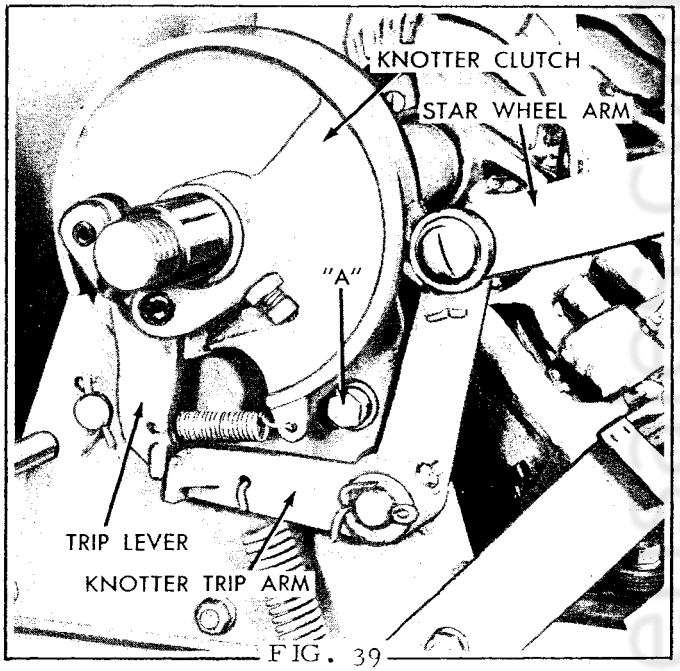


FIG. 39

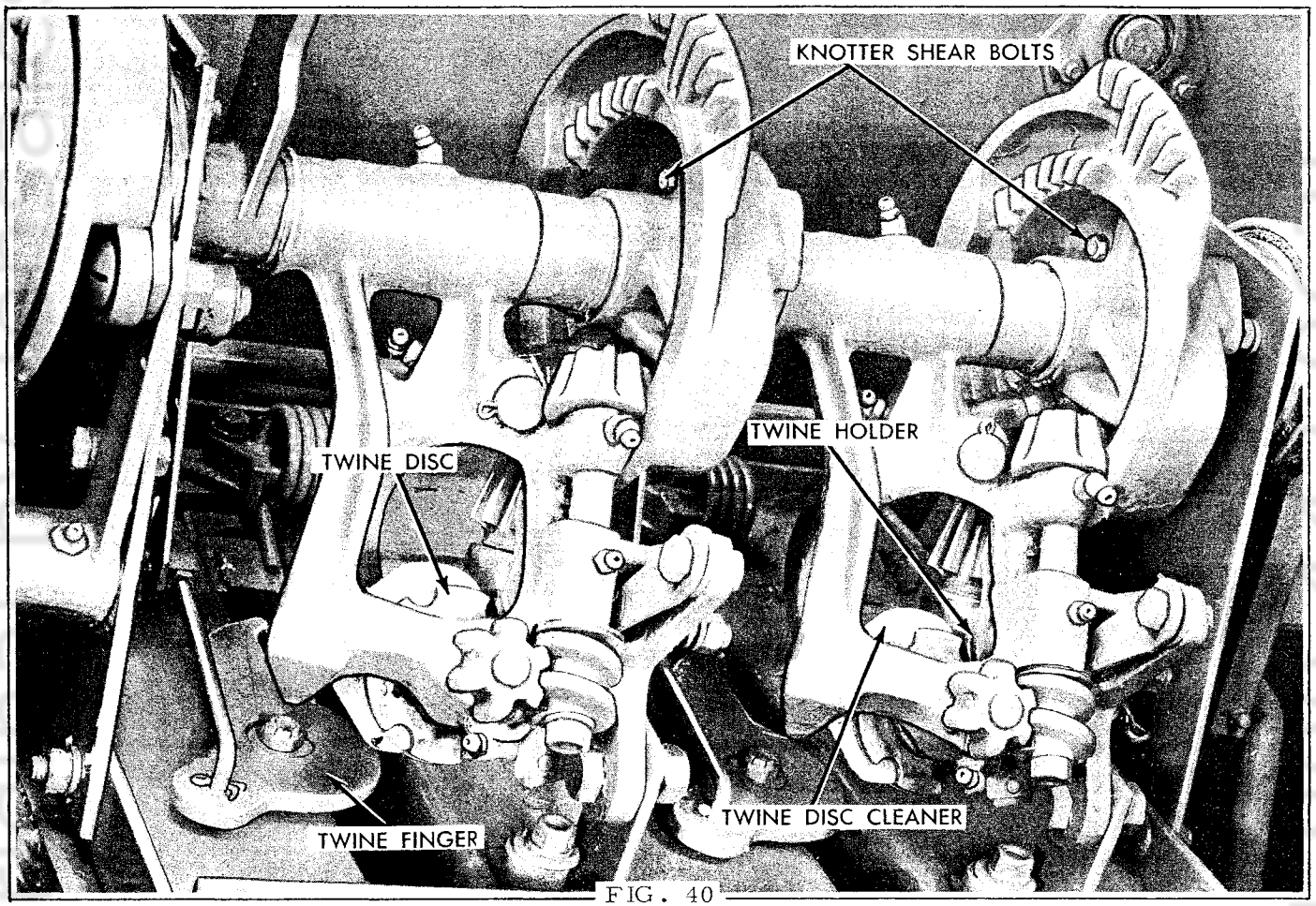


FIG. 40

KNOTTER TYING MECHANISM

FIG. 40

The Model 302 Bale Chief has a conventional twine tie knotter. The adjustments are simple, but extreme care should be taken when making and checking them.

In explaining the adjustments of tying mechanism, we tried to give location and function of each part. These adjustments should be studied carefully so you become acquainted with the tying mechanism.

The knotter assembly is properly adjusted and tested before leaving factory. Knotters should operate satisfactorily without immediate adjustment. If new baler misses tying a few bales at beginning, do not readjust knotter immediately, since this may be caused by paint or roughness on knotter parts.

Experience has shown that a large percentage of tying difficulties are the result of operating baler with too much spring tension on compression bars that control weight of bales.

Before making knotter adjustments, make certain excessive tension is not cause of difficulty, also check setting of needles and twine fingers before changing knotter adjustments. It is much easier to adjust and repair a knotter assembly on baler rather than remove knotter and replace with new assembly.

The most common causes for tying problems are listed below.

1. Tension of twine too loose at twine box.
2. Twine tangled in twine box.
3. Poor grade of twine.
4. Rough or rusted edges on tying parts.
5. Twine disc out of time.
6. Tension too loose or too tight on twine holder.
7. Excessive bale tension.
8. Needles not placing the twine in twine disc by not passing through knotter far enough.

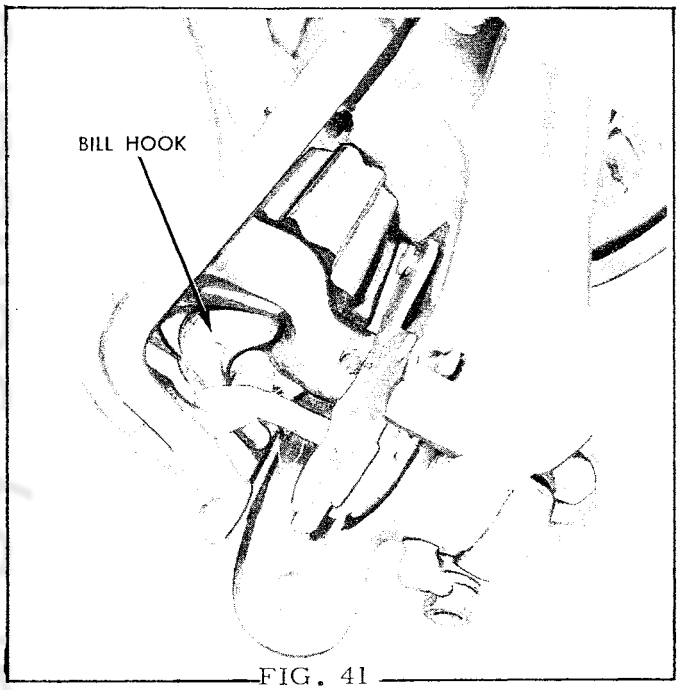


FIG. 41

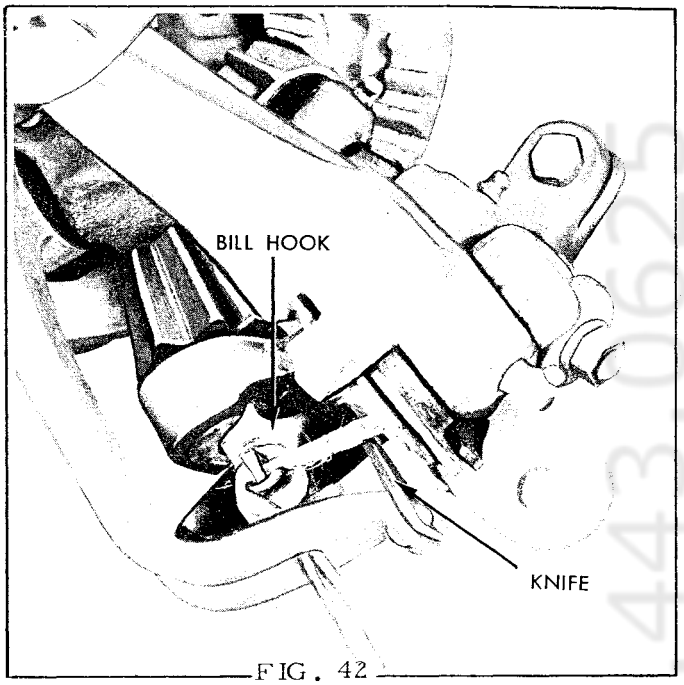


FIG. 42

The steps required to form a knot are briefly listed below to make knotter operation easier to understand

FIG. 41, 42, 43

1. The needle carries twine into knotter and places it in one of notches in twine disc.

2. The twine disc rotates, picking up twine and carrying it around so twine holder secures twine in twine disc.

3. The twine fingers then pull twine into path of knotter bill hook.

4. As knotter bill hook is rotated, the tongue opens, picks up and closes on twine, allowing loop of knot to be formed.

5. The knife and stripper assembly move over to cut twine and strip loop from knotter bill hook, pulling ends of twine through loop to complete the knot.

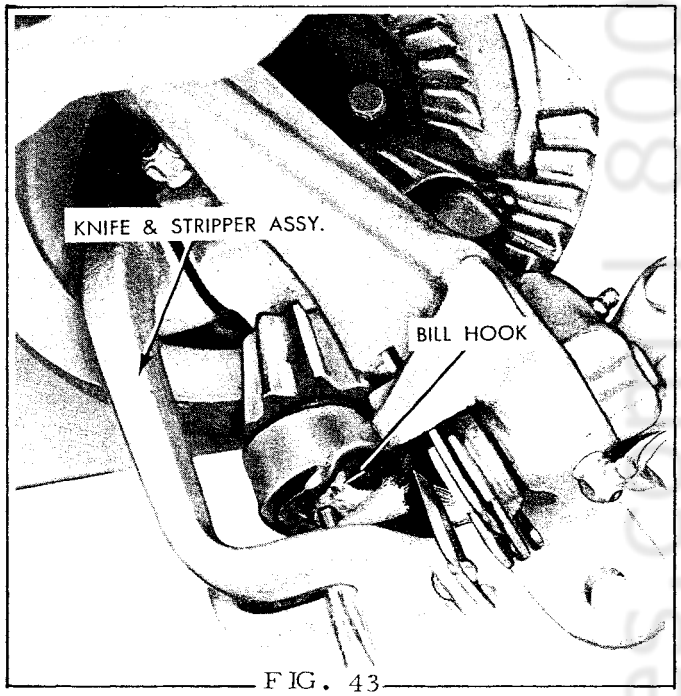


FIG. 43

KNOTTER SHEAR BOLT

FIG. 40

The knotter assemblies are protected by shear bolts located in each cam gear and cam gear collar. When these bolts break, the cause of breakage should be determined before bolt is replaced.

NOTE: The shear bolts are 1/4" x 1-1/8" Rd. Hd. Machine Screws. DO NOT REPLACE WITH HEAT TREATED BOLT.

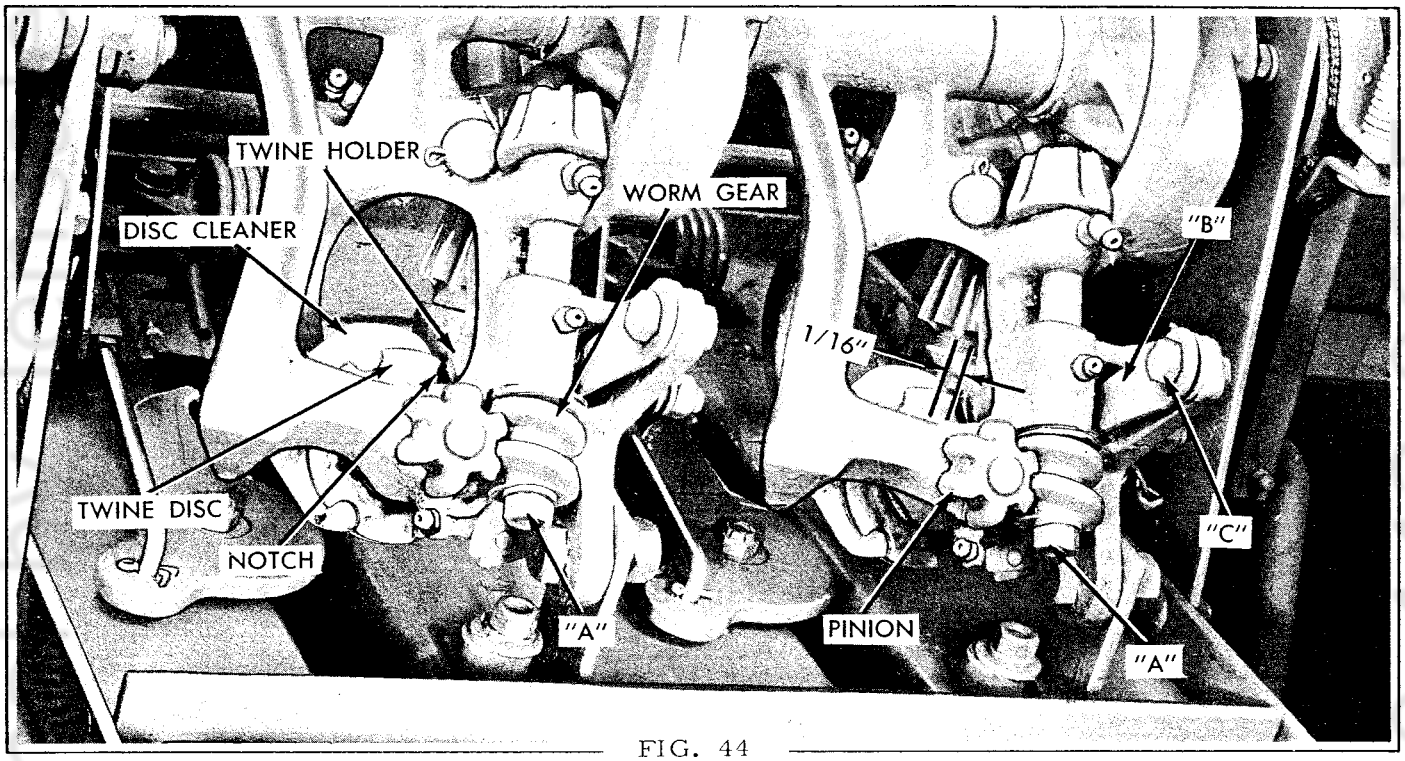


FIG. 44

TWINE DISC (FIG. 44)

The Twine Disc picks up twine from needle and positions it in path of bill hook. The twine disc and twine holder holds the end of twine while bale is being formed.

The setting of twine disc is determined by the positioning of notch in relation to disc cleaner. The L.H. edge of notch of twine disc should extend past R.H. edge of disc cleaner 1/16". To set twine disc in this position, loosen nut "A", tap shaft upwards, turn twine disc to the correct setting as stated. Tap shaft down and turn worm gear so that it fits up against the pinion gear, and tighten nut "A" making certain shims are not hung on shoulder of knotter frame.

NOTE: The shims located above worm gear are provided to remove end play of worm gear shaft. Too many shims will prevent worm gear from seating on taper of worm gear shaft. Maximum end play of worm gear shaft must not exceed 1/64" or .015".

TWINE HOLDER (FIG. 44, 45 & 50)

The Twine Holder consists of a double plate which holds twine in disc. Pressure is applied to twine holder by a flat spring "B" and pressure is adjustable with tension screw "C".

The spring pressure on twine holder should only be great enough to hold twine as bale is formed because twine must slip through twine disc as knot is being made. The tendency is to apply too much pressure on twine holder. Too much tension causes knotter tying problems.

There are times when a knotter will miss several knots and in checking the adjustments, they all appear to be correct. At this time it might be well to check condition of twine holder rivet. These rivets sometimes become bent toward R.H. side of baler. This could affect tension placed on twine by twine holder. These rivets should be straight or bent toward L.H. side of baler.

Proceed as follows to determine proper spring pressure.

1. Tie a knot with knotter.

2. Attach a spring scale to twine as shown.

3. Pull spring scale up at 90° from the bale chamber.

4. The upward pressure from spring scale should read from 80 to 95 lbs. before twine pulls out of twine disc.

NOTE: If and after flat spring has been fully compressed, it most generally takes a set and will not apply as much tension as required to hold twine in twine holder while making a tight bale of light material.

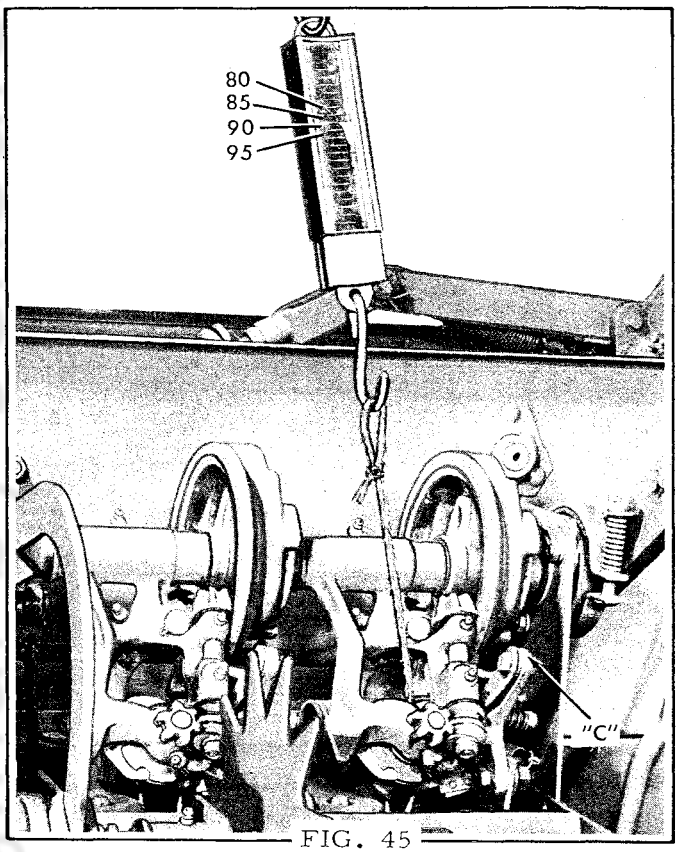


FIG. 45

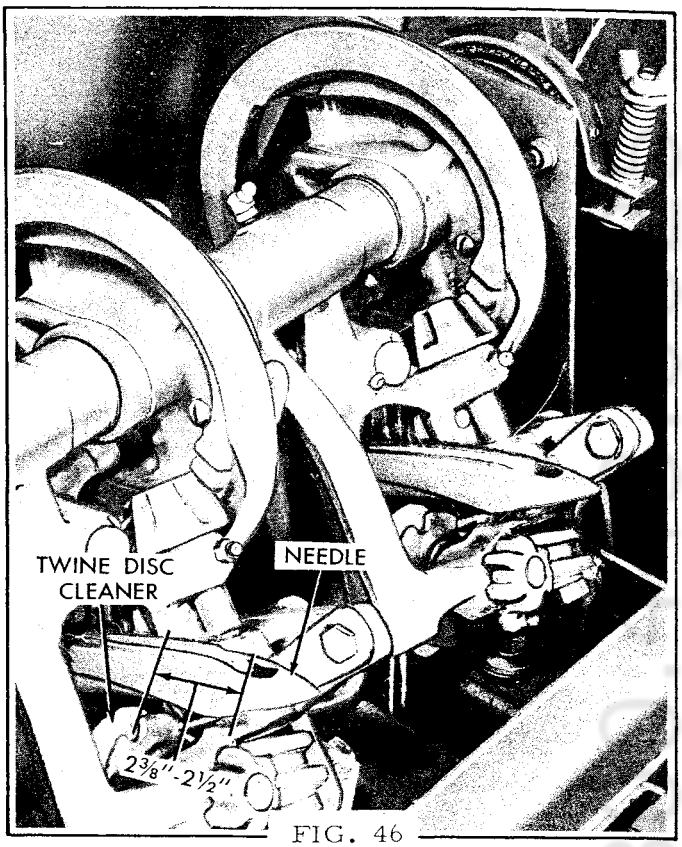


FIG. 46

NEEDLE SETTING (FIG. 46,47)

The needles place twine in twine disc of knotter so a knot can be formed, therefore, the needle relation to knotter is very important.

When knotter passes through a tying cycle and needles are at extreme end of stroke, the needles should pass through knotter over twine disc until a 2-3/8" to 2-1/2" dimension can be obtained from twine disc cleaner and inner end of twine hole in needle. To obtain this setting, adjust length of needle drive con-rod.

NEEDLE SHEAR BOLT (FIG. 47)

The needle drive is protected by a shear bolt in pivot arm, should the needles be obstructed from going through their cycle, the shear bolt shears allowing needle con-rod to continue its cycle without needles. While completing the cycle, needles are pushed out of bale chamber. Before replacing shear bolt, check needle assembly and ram slots for cause of shearing bolt.

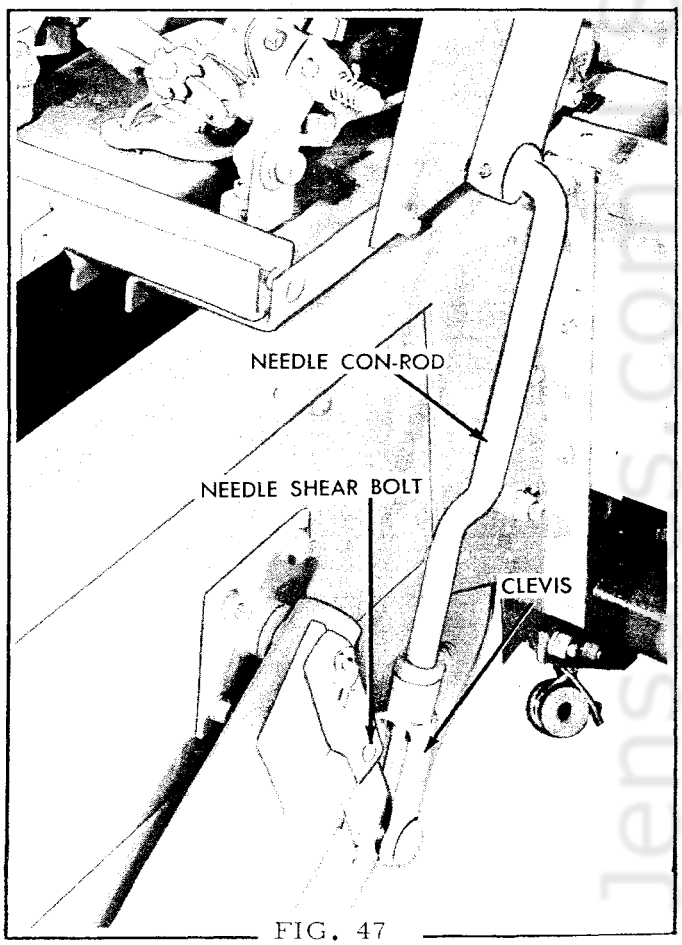


FIG. 47

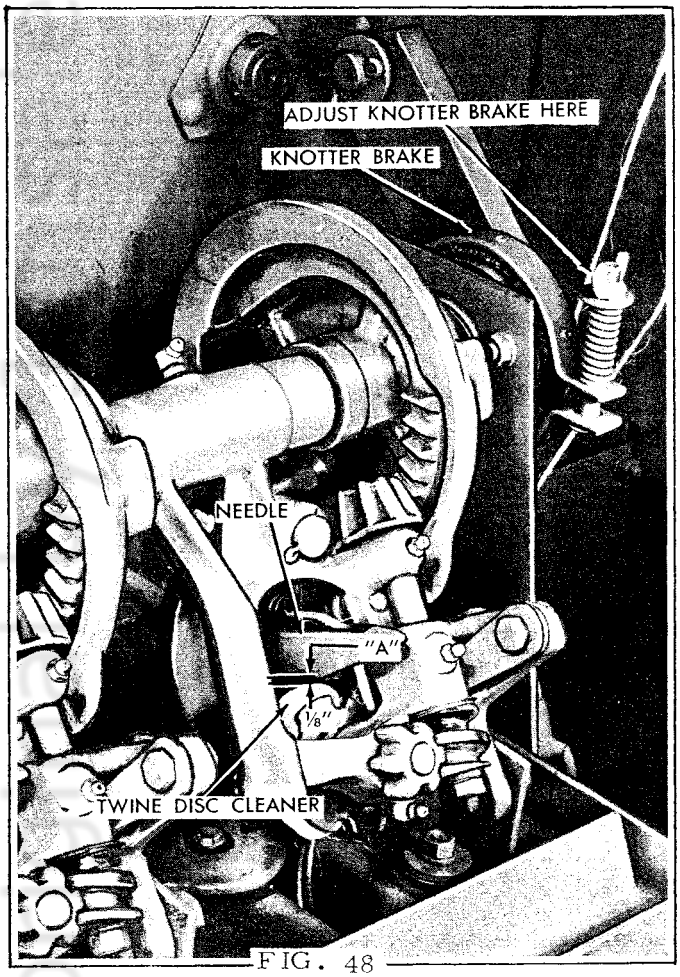


FIG. 48

NEEDLE SETTING (FIG. 48 & 49)

As Needles begin to retract and pass over twine disc cleaner, about a 1/8" clearance should exist between point at "A" and twine disc cleaner. This dimension can be obtained by adjusting bolts in needle clamp. Needle should also just clear bill hook gear.

KNOTTER BRAKE (FIG. 48)

The Knotter Brake consists of a spring loaded brake lining which is adjustable. The brake is designed to hold knotter shaft in its home position from time the knotters are tripped and until shaft is driven by the drive dog. If knotter brake is too tight, knotter clutch will not disengage properly. If brake is too loose, needle will swing back into chamber and engage ram stop.

As a starting point, compress spring tight with wing nut and back off wing nut two to three turns. Brake bands must be free to float on pivot bolt. Check brake adjustment daily.

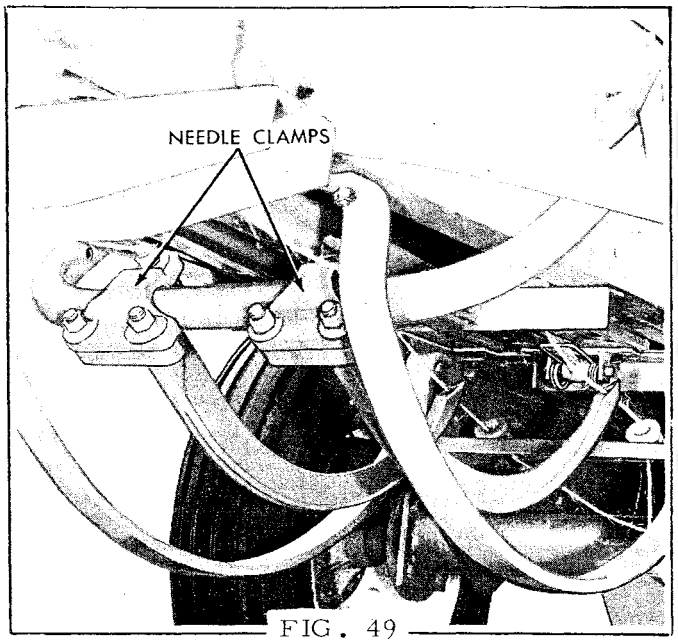


FIG. 49

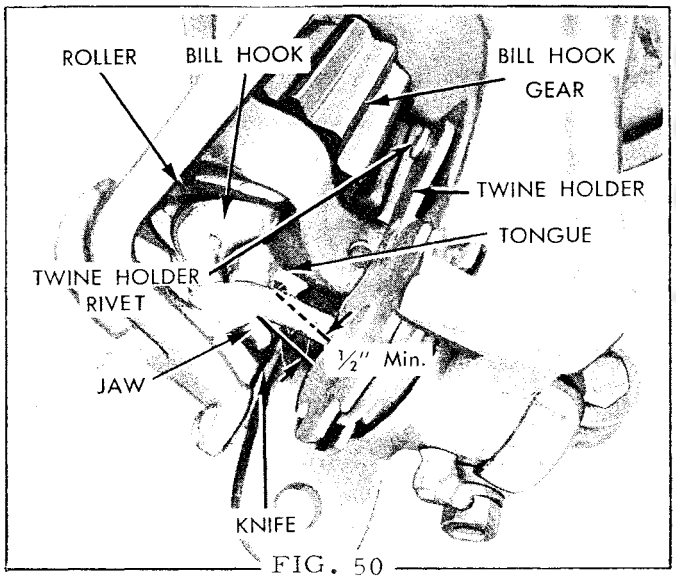


FIG. 50

BILL HOOK (FIG. 50, 52)

The correct adjustment of Bill Hook is essential. The correct dimension between Bill Hook Jaw and Tongue when fully open, should be 1/2" minimum. If Bill Hook does not open to this dimension, check Bill Hook Roller for flat spot due to not rotating. The Bill Hook should be free from all roughness and if a knot fails to come off, care should be taken so that Bill Hook is not cut or scratched when using knives or any other sharp object to remove knot. The tension on Bill Hook is applied by screwing up on nut "D". If excessive pressure is applied on Bill Hook, the knot cannot be stripped off the Bill Hook.

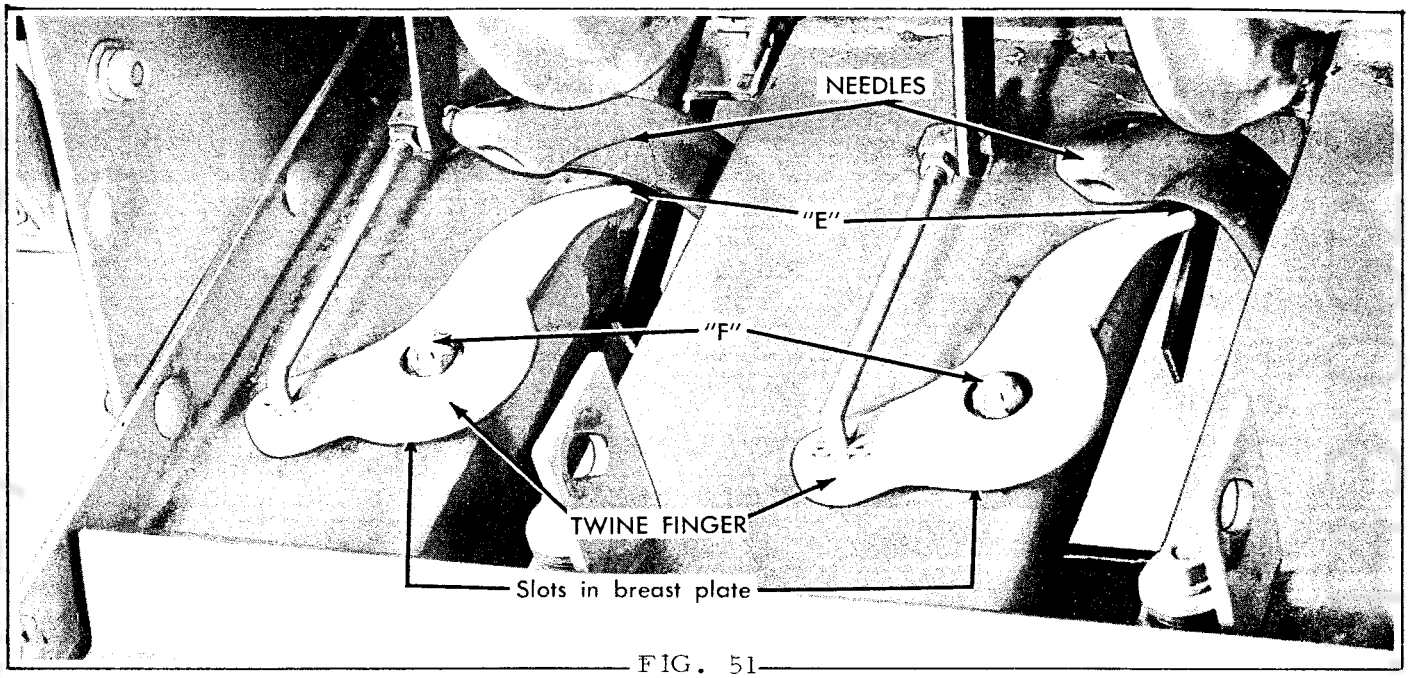


FIG. 51

STRIPPER & KNIFE ARM (FIG. 52)

The setting of this arm is very important; this is set at factory and should need no further adjsutment unless an obstruction has caused it to bend. If readjustment is necessary, remove bolt connecting knotters to breast plate and tilt knotter up. The stripper arm is properly adjusted when stripper lightly rubs against bottom of bill hook jaw when knotter is in operation. The stripper can be bent to obtain this setting, taking special care not to damage knife. The end of bill hook jaw should clear stripper arm knife 1/16" as it rotates.

TWINE FINGERS (FIG. 51 & 52)

The Twine Fingers place twine from needles in path of bill hook.
NOTE: The needles must be properly adjusted before checking finger adjustments.

There are two adjustments to be considered when checking twine fingers. First, they must be adjusted so tips of twine fingers are from 1/8" to 3/16" to needles at "E" as they enter the knotter. This dimension can be obtained with bolts at "F" and slots in breast plate.

Secondly, with needles in home position, twine fingers should be adjusted so that area at "G" is parallelto slot in breast plate and point of twine finger should extend over slot in breast plate 1/4". This dimension is obtained by adjusting actuating rod "H".

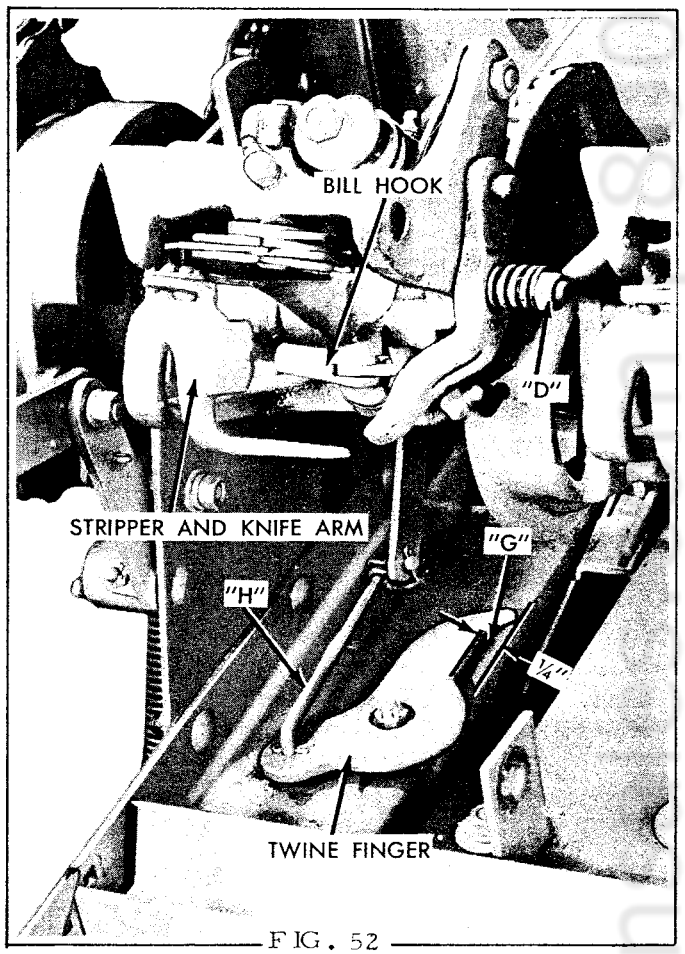


FIG. 52

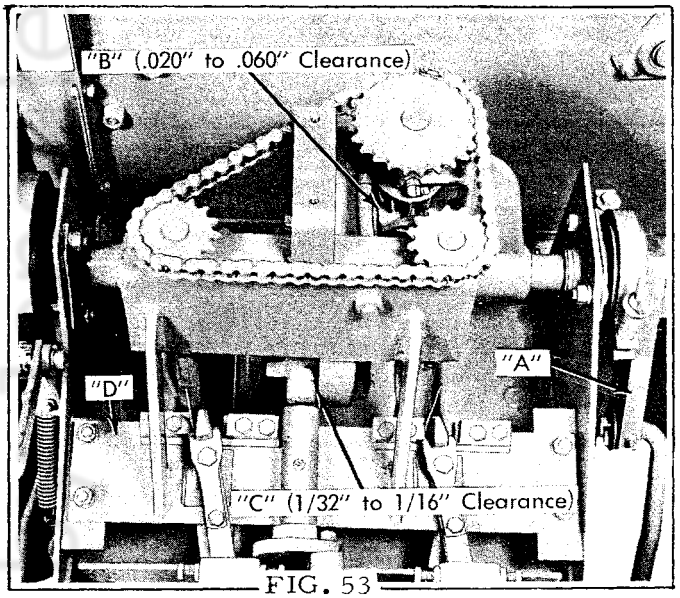


FIG. 53

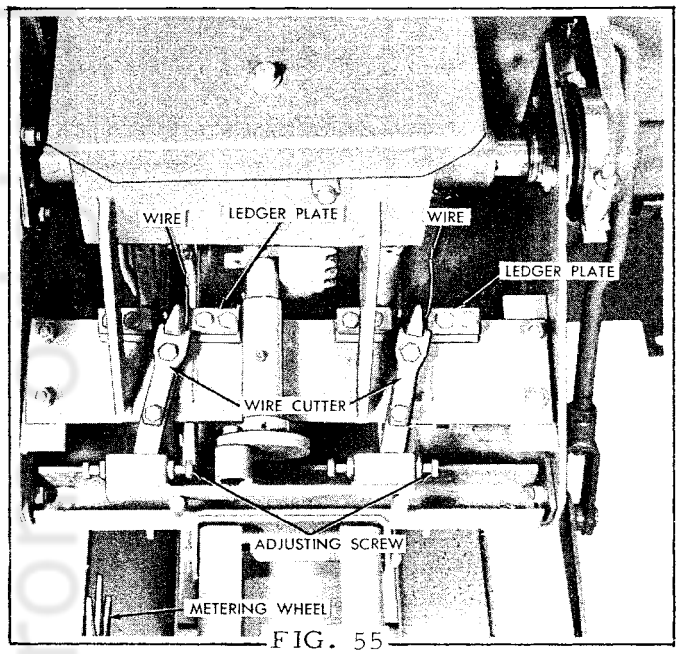


FIG. 55

WIRE TWISTER

The wire twisting mechanism is a simple, proven device which twists the wire ends together securely. No short pieces of wire are cut and left on the bales, providing protection to the livestock from hardware sickness and death.

The wire twister is simple and easy to adjust and requires little attention once it is in operation. Each twister is adjusted and operated before baler is shipped from the factory, however, rough handling in loading, unloading and in transit make it advisable to recheck adjsutment and correct if necessary.

If for some reason parts are removed from twister shaft make certain shims and spacers are replaced in their original position.

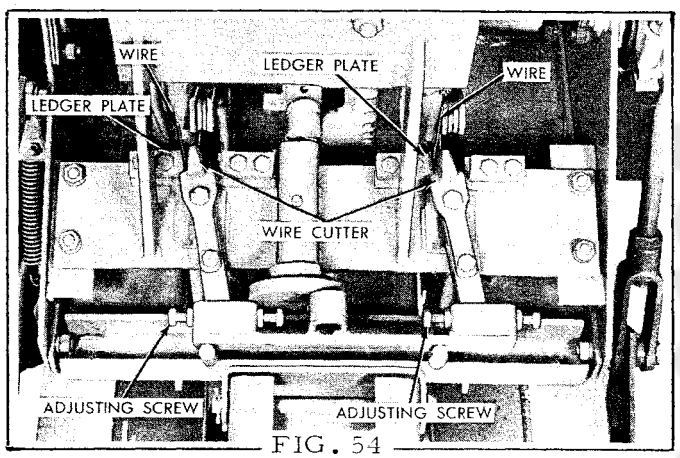


FIG. 54

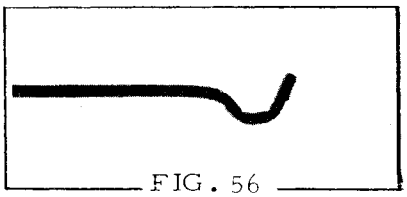


FIG. 56
(Wire Properly Crimped)

To check and adjust the wire twister proceed as follows:

FIG. 53

First place needles in home or baling position, (crank arm "A" down as shown), check clearance at "B", this should be from .020" to .060", clearance at "C" should be from 1/32" to 1/16", if clearance at either point is not correct then relocate shims on shaft and shift plate "D" as required.

FIG. 54, 55, 56

First cut two short pieces of wire, 3 or 4 inches long, from a spool of baling wire. Engage the knotter drive by rotating metering wheel. Place the two pieces of wire in bottom of groove between wire cutters and ledger plates, turn flywheel through one complete tying cycle; then, by hand, pull straight up on both wires - don't bend or wiggle. If either or both wires can be pulled from holder, then tighten by turning adjusting screw in until wire is tight.

Again engage knotter drive clutch and turn flywheel until wires can be removed from holders for inspection. Crimp should appear similar to that shown, holders should score wire slightly to prevent slipping.

If score is too deep wire will break. If crimp does not appear to be correct, go through cycle and readjust. After holders have been adjusted on one side then adjust on opposite side in same manner.

FIG. 57

To check timing of twister hooks the needles must be in the home or baling position, (crank arm down and back as shown), at this time point of twister hooks must point straight back towards rear of bale chamber. If either twister hook is out of time, remove twister shaft drive chain and rotate shaft to where hook is properly positioned Replace chain and adjust tension with the jack bolt so chain can be flexed about 1/2" at position "A".

FIG. 57

The wire deflector rods should be adjusted to have about 1/16" clearance between rod and twister shaft, and at least 1/4" between end of rod and top of twister hook where it attaches to twister shaft.

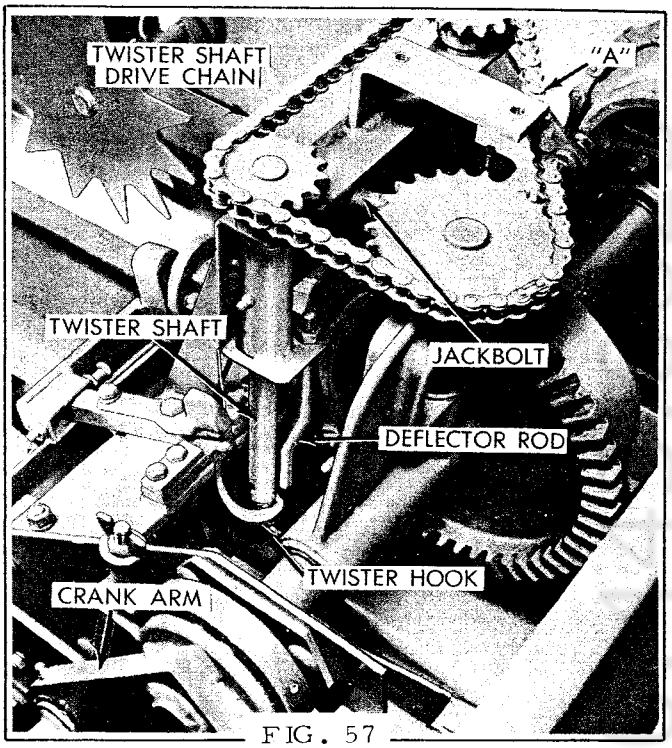


FIG. 57

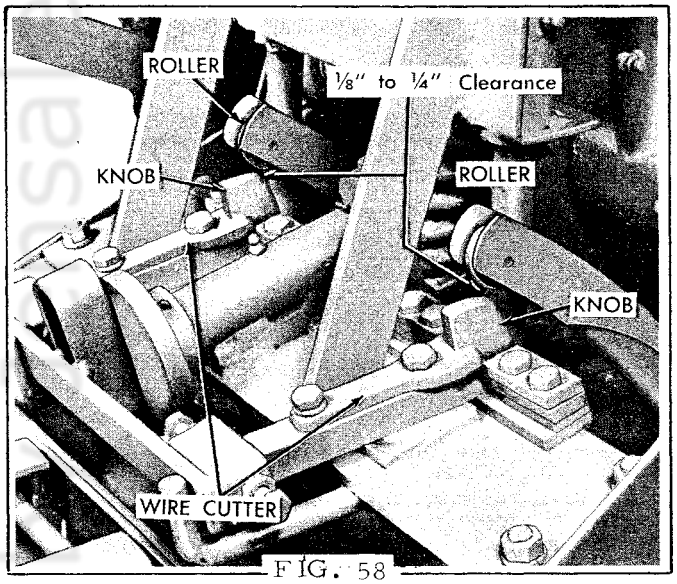


FIG. 58

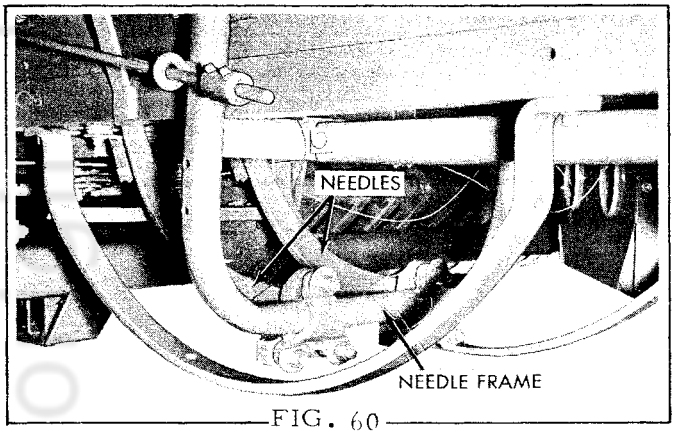


FIG. 60

NEEDLE ADJUSTMENT

FIG. 58, 60

To check adjustment of the needles, engage the knotter drive clutch and rotate flywheel to where rollers at end of needles are directly over knob on top of wire cutter. There must be from 1/8" to 1/4" clearance between roller and knob. Adjustment is made with the two bolts that attach needle to the needle frame. To increase clearance loosen rear bolts and tighten front bolt. To increase clearance loosen front bolt and tighten rear bolts.

FIG. 59

At same time needles are being checked or adjusted for height, check alignment of needles over wire cutter pivot bolts. Center of needle roller must be in alignment with center of wire cutter pivot bolt.

FIG. 60

To make adjustment, loosen bolts that attach needle to needle frame, move needles as reauired.

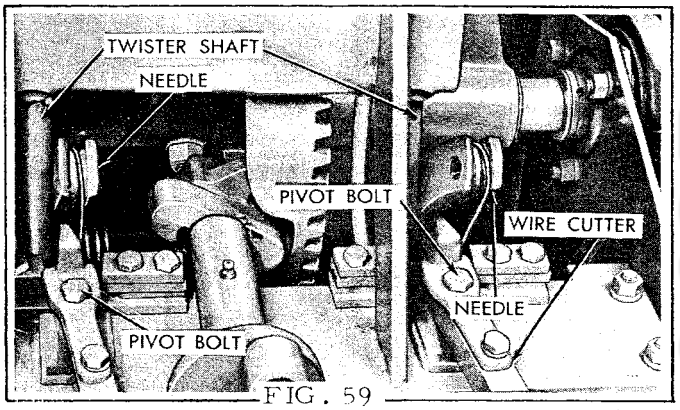


FIG. 59

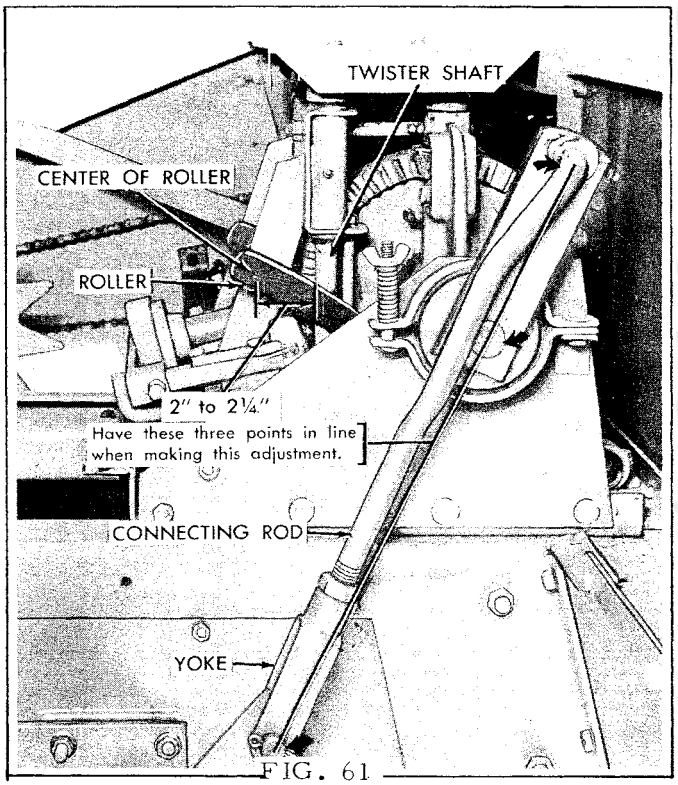


FIG. 61

FIG. 61

The needles must also be adjusted for proper travel beyond wire twister shaft. This is checked by rotating the flywheel to where the needle frame is in the extreme forward position, or when arm on right hand end of knotter drive shaft is up and centers of hole in arm, knotter drive shaft and pin hole in bracket on right hand side of needle frame, are in line. At this point distance from center of roller to rear of twister shaft must be between 2 and 2-1/4 inches. To adjust needle travel remove pin from yoke and shorten or lengthen connecting rod as required.

ALIGNING NEEDLES AND PLACING WIRE IN BALER (FIG. 62, 63)

Place two 100 lb. rolls of wire in the wire box leaving wire in carton. Pull wire from center of rolls and thread left and roll through rear

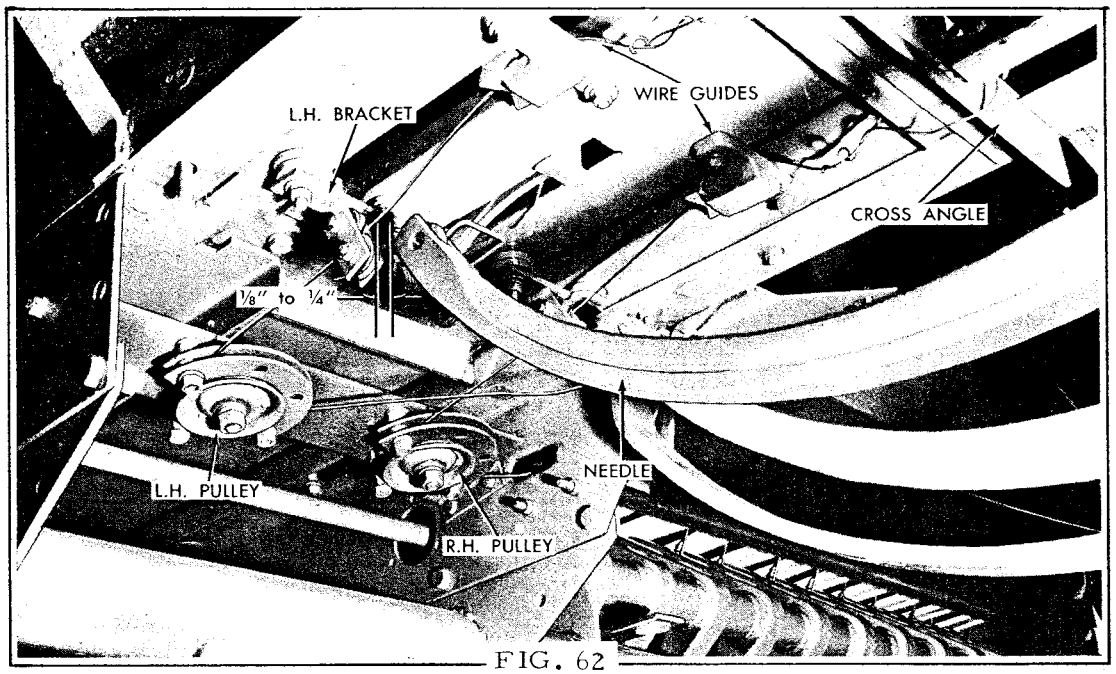


FIG. 62

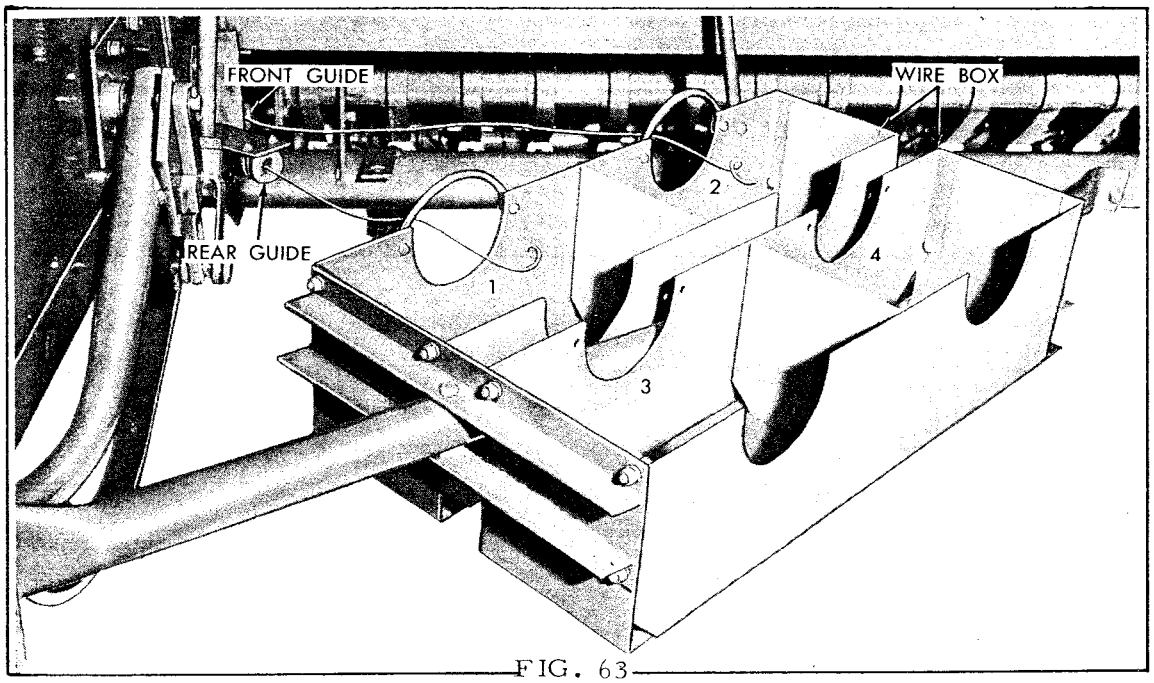


FIG. 63

guide, around left hand pulley under bale chamber, between the two small pulleys suspended below right hand needle groove in bale chamber, over wire guide and tie wire to cross angle as shown. Then place right hand wire through front guide, around right hand pulley under baler, between two small pulleys under left hand side, over wire guide and tie wire to cross angle. With wires fairly snug, shift the brackets containing the two small rollers to where they are in line with rollers in end of needles, and there is from 1/8" to 1/4" clearance between end of needle and lower roller.

Rotate baler through one tying cycle; then, if all adjustments are correct, the baler is threaded and ready to start baling. Remove the two short ends of wire that were cut off and are tied to angle under bale chamber.

Two extra rolls of wire can be placed in rear section of wire box and inner ends of 3rd and 4th roll of wire can be connected to outer end of 1st and 2nd rolls, which are located in front section of wire box. This makes a total of four rolls of wire which are ready and available for baling.

NOTE: Baler wire should be kept dry while in storage or in machine. Wire that has been wet or damp has a tendency to break while being twisted.

Lubricate all lube fittings on wire twister assembly twice daily.

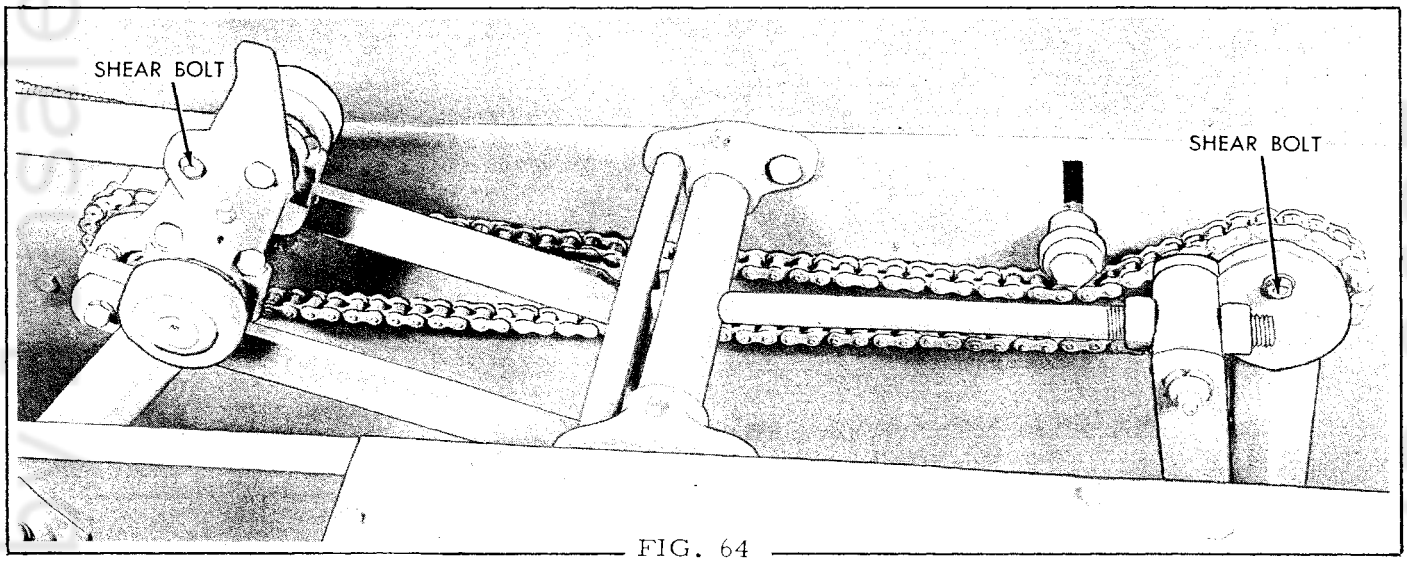


FIG. 64

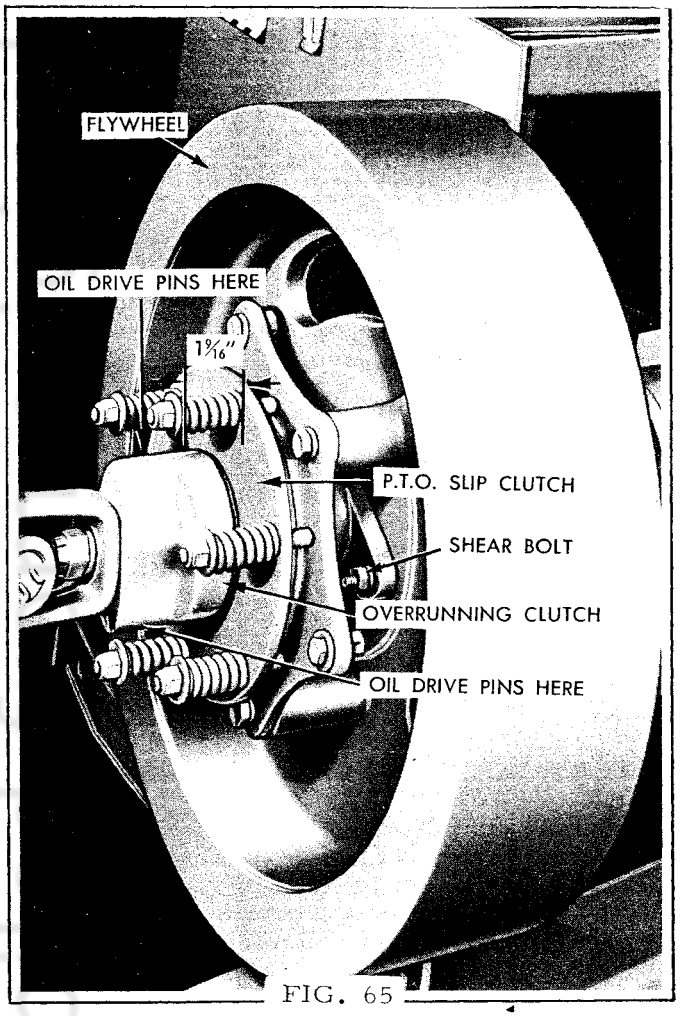


FIG. 65

P.T.O. SLIP CLUTCH (FIG. 65)

The function of P.T.O. slip clutch is to protect baler mechanism from overloads. Make certain slip clutch discs are not stuck with paint or rust before starting baler.

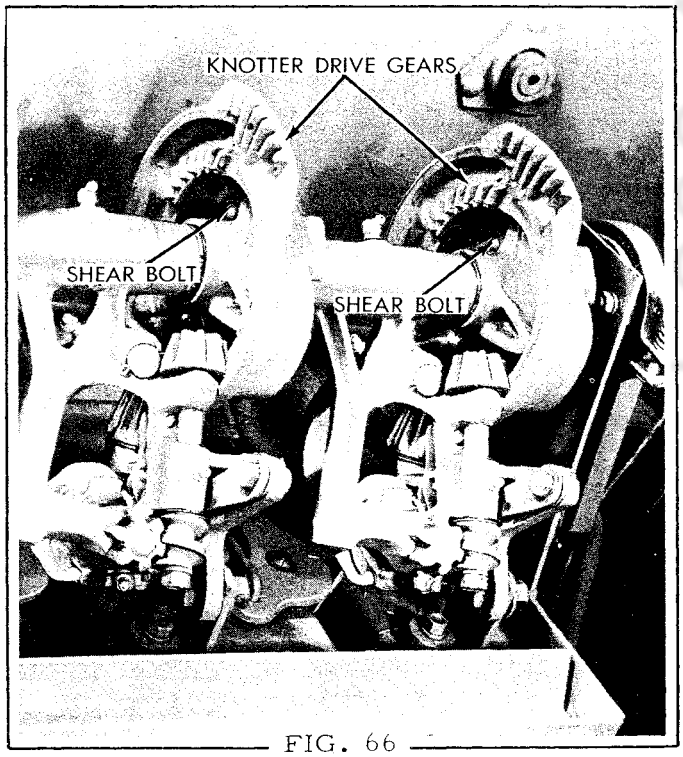


FIG. 66

Clutch springs should have 1-9/16" overall spring length for proper action on new machine. When clutch requires readjustment, tighten each tension bolt a fraction of a turn to increase pressure of springs.

CAUTION: Never adjust springs so tight that clutch cannot slip. This is harmful to machine and transmits loads back through tractor P.T.O. gears. Oil drive pins of over-running clutch with light engine oil before operating baler.

SHEAR BOLTS (FIG. 64, 65, 66, 67)

The 302 baler is equipped with six shear bolts to protect various parts of unit.

FIG. 65

There is one shear bolt in flywheel to protect entire machine.

FIG. 64

There is a shear bolt located in each feed rake assembly for their protection.

FIG. 67

There is a shear bolt located in needle pivot arm to protect needles when obstructed below or in bale chamber.

FIG. 66

There is also a shear bolt located in each knotter drive gear to protect each knotter assembly. (Twine tie only)

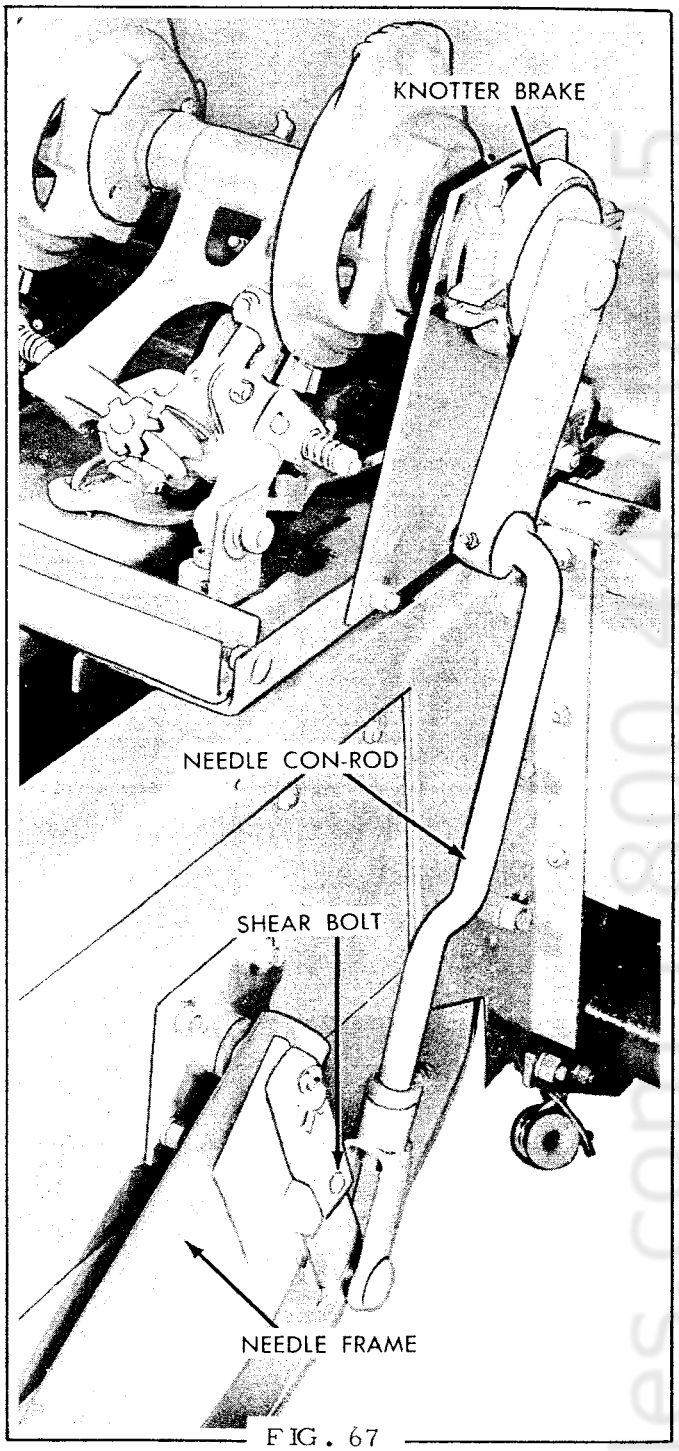


FIG. 67

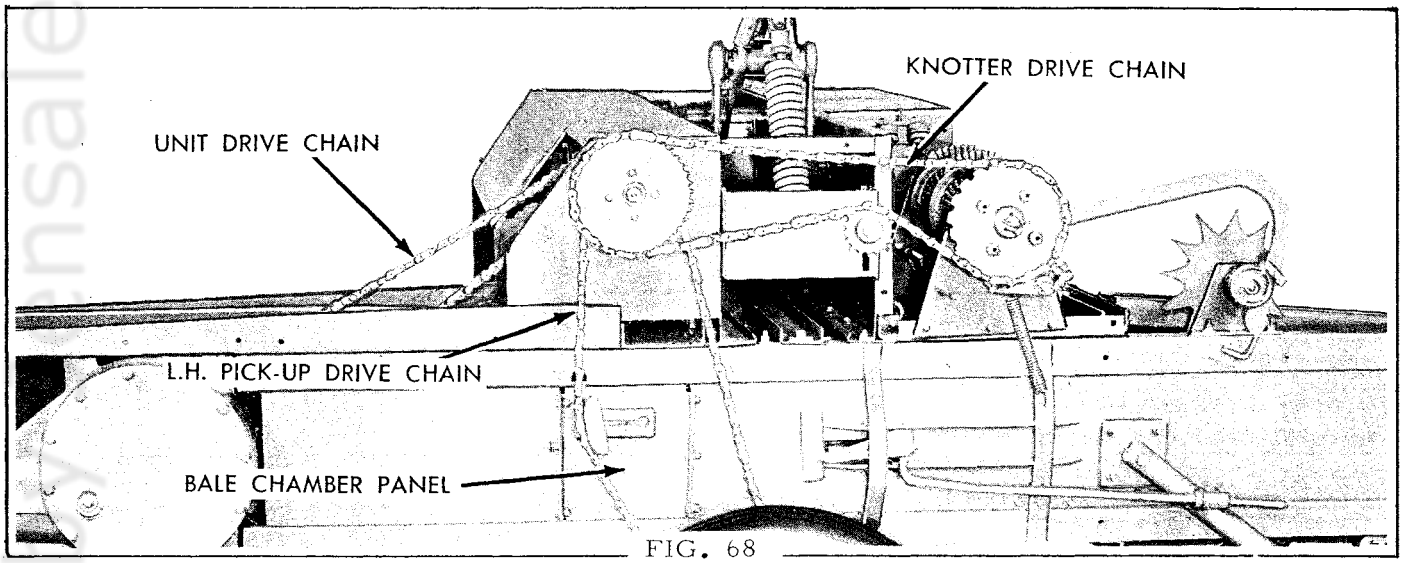


FIG. 68

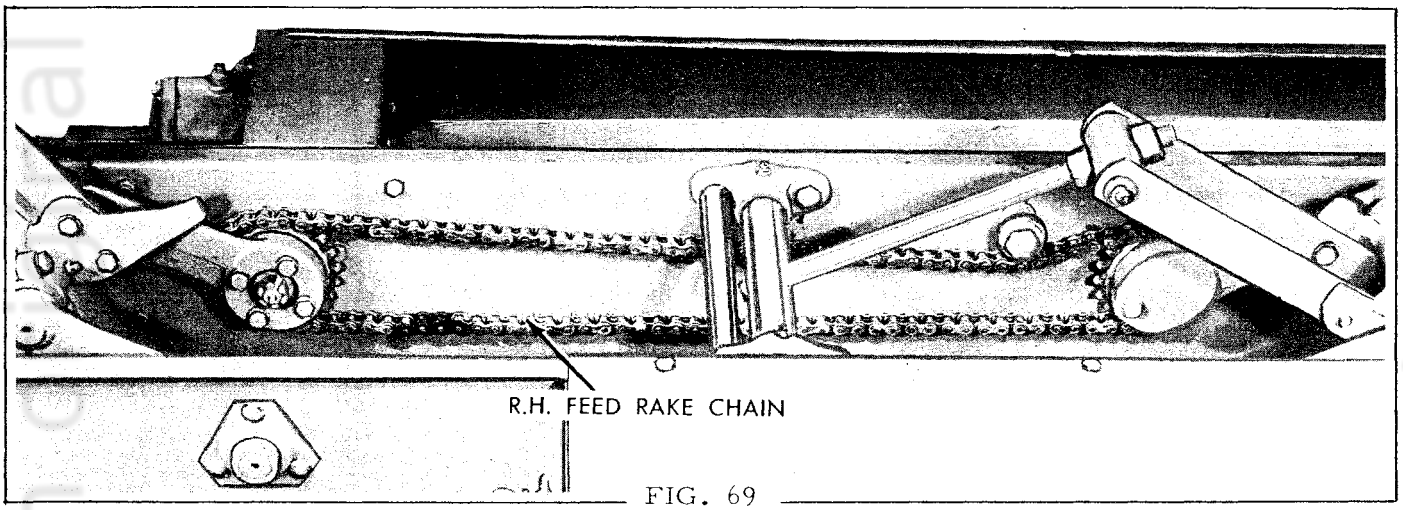


FIG. 69

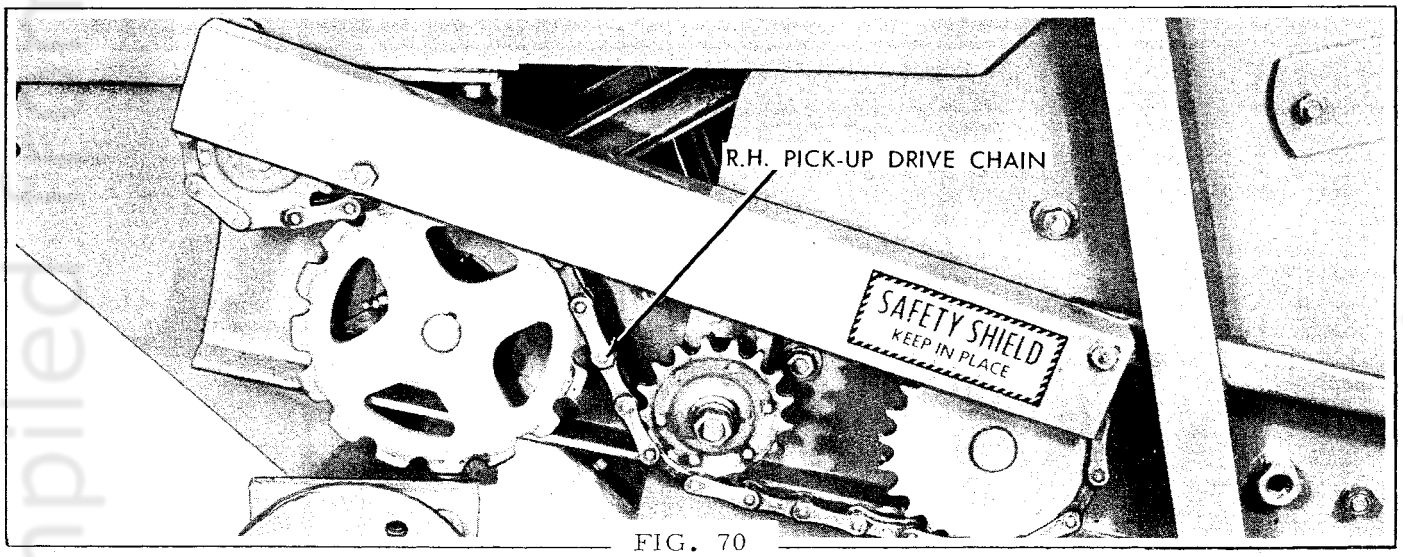


FIG. 70

ROLLER CHAINS (FIG. 68, 69, 70)

The 303 Baler has five roller chains and above photos show location and proper installation of each chain. Chains must be kept tight.

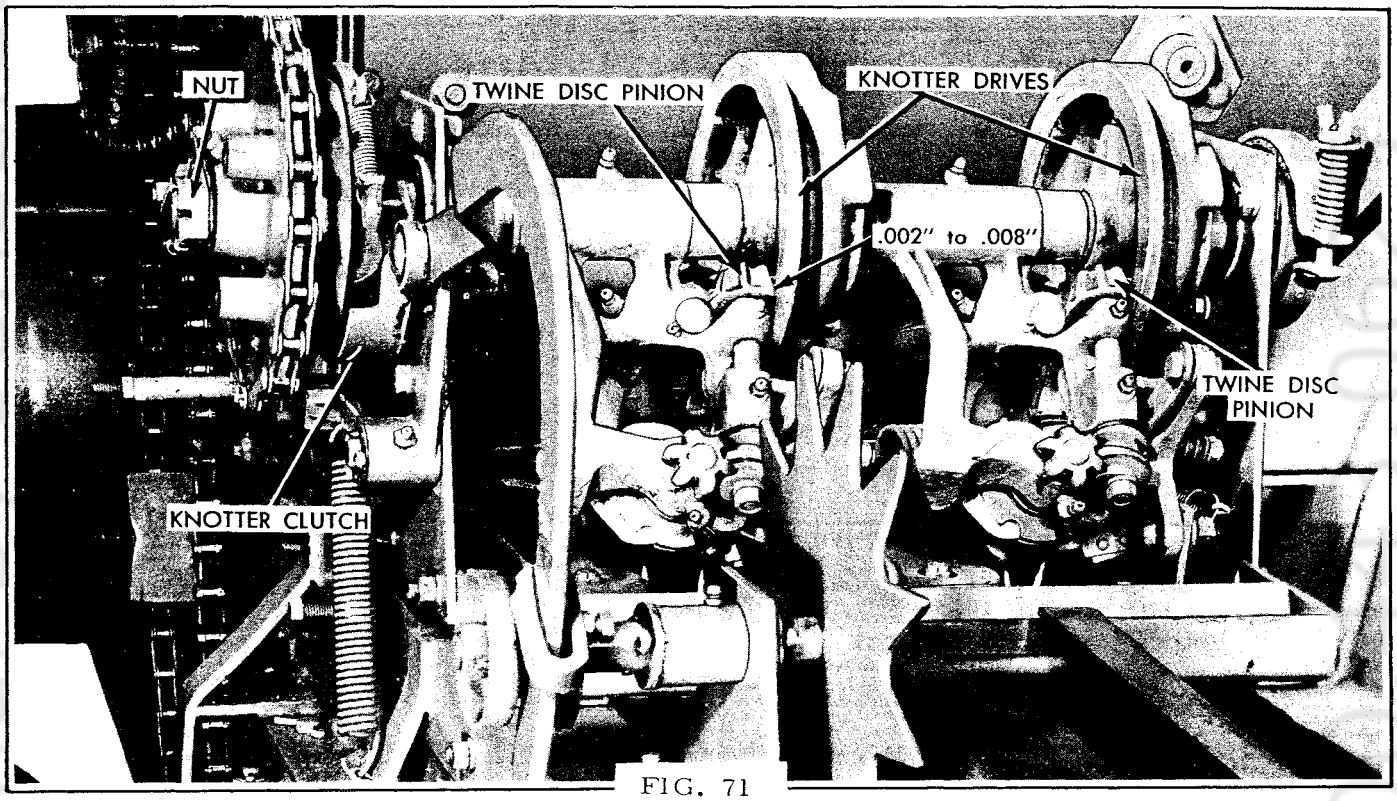


FIG. 71

TIPS FOR KNOTTER ASSEMBLY (FIG. 71)

If Knotter Assemblies are removed and replaced for any reason, always replace washers and spacers as they were originally found.

The clearance between knotter drives and twine disc pinion should be .002" to .008". This dimension is obtained by adding or removing washers from between knotter drive gear and knotter frame assembly.

Remove all end play of knotter shaft with nut on L. H. end of shaft before locking bearing collars or setscrew in knotter clutch.

STORAGE

Your Baler should be taken to an authorized Allis-Chalmers Dealer for a complete check over at the end of each season to assure the best performance at the beginning of the next season.

AT THE END OF EACH SEASON:

1. Shelter the Baler in a dry place.
2. Ease off all tension in the Bale Chamber.
3. Clean the Baler thoroughly inside and out. (Remove crop from bale chamber).
4. Grease Chamber thoroughly.
5. Lubricate all Bearings and Chains.
6. Fill both Gear Boxes with oil before storing.
7. Apply a coat of rust preventive on Knotters and all bright parts.
8. Block up Baler under the Axle to relieve tires. DO NOT deflate tires. Cover tires to protect them from light, grease and oil.
9. If possible, cover the entire Baler with a tarpaulin.
10. List the replacement parts which will be needed, and order them early; example Shear Bolts, etc.

The Dealer can expedite delivery of parts and install them during slack periods, avoiding delays next baling season.

FIELD SERVICE SUGGESTIONS

IF YOU HAVE	PROBABLE CAUSE	TO CORRECT
Excessive shearing of flywheel bolt.	1. Foreign object in the hay.	1. Remove foreign object.
	2. Dull ram knife and stationary knife.	2. Sharpen ram knife and stationary knife.
	3. Clearance between stationary knife and ram knife too great.	3. Shim ram knife to stationary knife.
	4. P.T.O. clutch adjusted too tight.	4. Adjust clutch.
	5. Bale tension too tight.	5. Loosen bale tension and make longer bales to get desired weight.
	6. Crop being baled too wet.	6. Allow crop to dry.
Excessive slipping of flywheel clutch on P.T.O. baler.	1. Baler not operating at required number of strokes per minute.	1. Baler (when P.T.O. driven) must operate at 67 to 70 strokes per minute while baling.
	2. Tension too tight on bales.	2. Reduce tension.
	3. Excessive rate of feed.	3. Reduce rate of feed.
	4. Clutch not set at proper tension.	4. Check clutch condition.
	5. Foreign object in hay.	5. Remove foreign object.
	6. Dull ram knife and stationary knife.	6. Sharpen ram knife and stationary knife.
	7. Too much clearance between ram knife and stationary knife.	7. Shim ram knife to stationary knife.
	8. Crop too wet.	8. Allow crop to dry.
Failure to pick-up clean.	1. Pick-up adjusted too high from ground.	1. Adjust pick-up height so tines clear ground approximately 1/2".
	2. Pick-up tines bent or broken.	2. Replace bent or broken tines.
	3. Ground speed too fast.	3. Reduce ground speed or rake larger windrows.
	4. Windrow too light.	4. Make larger windrows.
	5. Windrow not completely turned.	5. Windrow must be completely turned.
Misshaped bales.	1. Material is not uniformly distributed in the bale chamber.	1. Change throw of L.H. feed rake by adjusting clevis on spring rod.
	2. Uneven rate of feed.	2. Baler should be fed uniformly.

FIELD SERVICE SUGGESTIONS

IF YOU HAVE	PROBABLE CAUSE	TO CORRECT
Ragged bales.	1. Dull ram knife and stationary knife.	1. Sharpen ram knife and stationary knife.
	2. Improper clearance between ram knife and stationary knife.	2. Shim ram knife to stationary knife.
	3. Travelling too fast.	3. Travel slower.
Needle breakage.	1. Solid object in needle slots.	1. Remove solid object and clean slots.
	2. Needles striking knotter frame or some part of ram.	2. Adjust needles.
	3. Needles out of time with ram.	3. Time needles.
	4. Needles repeating cycle.	4. Check knotter clutch trip for broken or loose spring.
	5. Loose bolts on needle.	5. Tighten bolts and check for interference.
	6. Operating baler above recommended speed.	6. Baler must not be operated over 70 strokes per minute.
	7. Needles not clearing bale chamber bottom to recommended clearance.	7. Adjust needle penetration.
Twine cut or broke, but no evidence of a knot is present.	1. Rough edges on twine holder or disc.	1. Smooth rough edges with emery cloth or replace worn parts.
	2. Insufficient tension on bill hook cam.	2. Tighten tension on bill hook cam.
	3. Twine holder spring too tight and does not allow sufficient twine to slip through disc to form knot.	3. Loosen twine holder tension asjusting screw. Clean dust and chaff from under twine holder spring.
	4. Bent bill hook tongue.	4. Replace bill hook tongue.
	5. Twine holder spring tension too loose allowing twine to slip out of disc.	5. Increase twine holder spring tension.
	6. Needles not close enough to knotter frame.	6. Adjust needles closer to knotter frame.
Twine is not picked up in the twine disc.	1. Insufficient tension on twine at box.	1. Tighten spring tension on twine at twine box.
	2. Twine disc out of time.	2. Time twine disc.
	3. Tension on twine holder adjusted too tight.	3. Loosen adjusting bolt on twine tension spring.
	4. Needles out of adjustment.	4. Set needle adjustment.

FIELD SERVICE SUGGESTIONS

IF YOU HAVE	PROBABLE CAUSE	TO CORRECT
Knots hanging on bill hooks.	1. Bent bill hook tongue.	1. Replace bill hook tongue.
	2. Stripper arm not set close enough to bill hook.	2. Adjust stripper arm.
	3. Too much tension on bill hook cam.	3. Loosen tension on bill hook cam.
	4. Bill hook cam binding on bill hook adjusting screw.	4. Remove burrs.
	5. Stripper arm does not travel far enough past end of bill hook.	5. Adjust stripper arm.
	6. Worn or rough bill hook.	6. Replace or polish bill hook.
	7. Dull stripper arm knife.	7. Replace or sharpen knife.
Knot only tied on one end of twine.	1. Twine fingers too far back from needle slot.	1. Adjust twine fingers.
	2. Too much clearance between twine fingers and needles.	2. Adjust twine fingers.
	3. Haydog not entering bale chamber.	3. Clean hay and dirt from between haydog and bale chamber.
	4. Twine disc timing.	4. Set twine disc timing.
	5. Bill hook tongue fails to open wide enough.	5. Bill hook roller has worn groove in knotter frame. Replace frame or rebuild groove with weld.
	6. Bent bill hook tongue.	6. Replace bill hook.
	7. Baling hay too wet or green and pulling twine out of twine disc.	7. Let hay cure or dry out.
	8. Too much bale tension pulling twine out of twine disc.	8. Loosen bale tension.
	9. Twine finger return spring broken.	9. Replace twine finger return spring.
	10. Insufficient tension on twine at twine box.	10. Tighten spring on twine at twine box.
	11. Insufficient spring tension on twine holder. Allows twine to slip out of disc.	11. Increase spring tension on twine holder.
	12. Twine tension spring too tight and does not allow sufficient twine to slip through disc to form knot.	12. Loosen tension on twine holder spring.

FIELD SERVICE SUGGESTIONS

IF YOU HAVE	PROBABLE CAUSE	TO CORRECT
Knot tied, but twine broken at the knot.	1. Bale too heavy in dry material.	1. Loosen bale tension.
	2. Twine catching on something after bales are tied.	2. Check for interference.
	3. Rough or sharp edges on bill hook.	3. Polish bill hook with emery cloth.
	4. Poor grade of twine.	4. Use good grade of twine.
One twine end longer than other.	1. Dull twine knife.	1. Sharpen or replace knife.
	2. Insufficient spring tension on twine holder.	2. Increase spring tension on twine holder.
Twine frayed or broken approximately 1/2" from the knot.	1. Not enough clearance between bill hook and inside face of the stripper arm.	1. Adjust stripper arm.
Twine frayed or broken approximately 3" from the knot.	1. Rough edges or sharp projection on stripper arm.	1. Polish with emery cloth.
Twine frayed or broken approximately 5" from the knot.	1. Rough bale chamber slot.	1. Polish with emery cloth.
	2. Rough or rusty twine finger.	2. Polish with emery cloth.
Twine discs do not stay in time.	1. Twine disc drive pinion pin sheared.	1. Replace pin.
	2. Adjustable knotter worm gear slips on shaft.	2. Locknut not tight, or spacer washers holding gear off tapered shaft.
	3. Worn gears.	3. Replace gears.
	4. Cracked knotter worm gear.	4. Replace cracked gear.
Twine wraps around bill hook shaft.	1. Twine disc out of time or needle too far from face of knotter frame.	1. Adjust twine disc or needle.

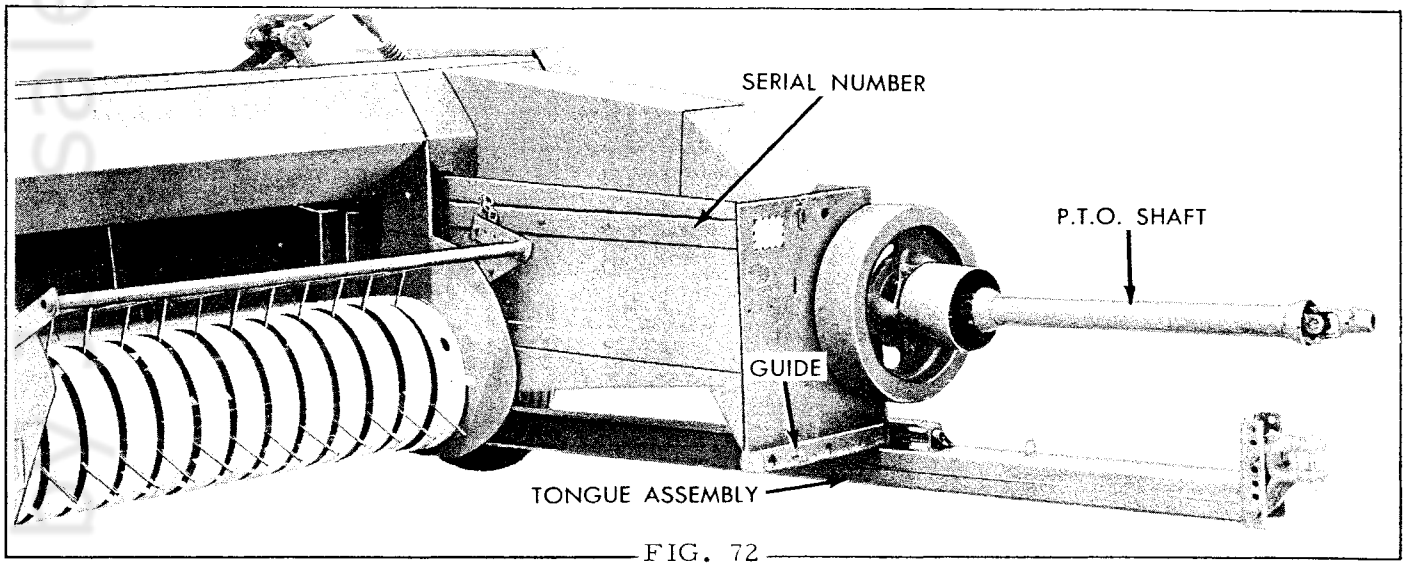


FIG. 72

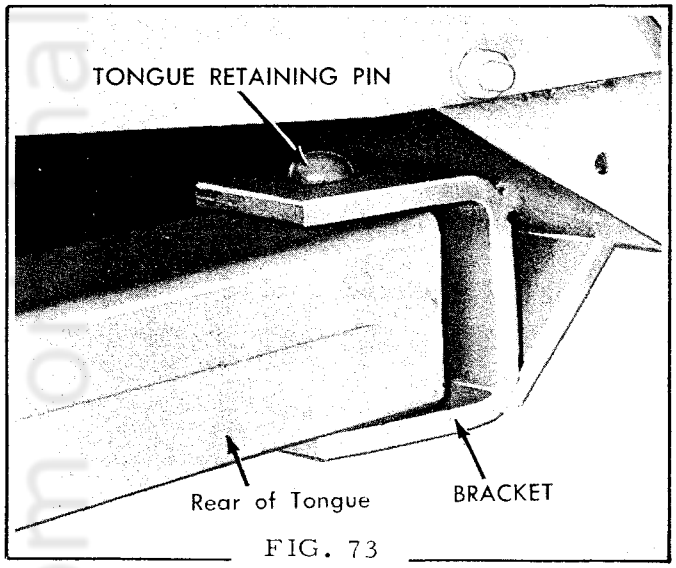


FIG. 73

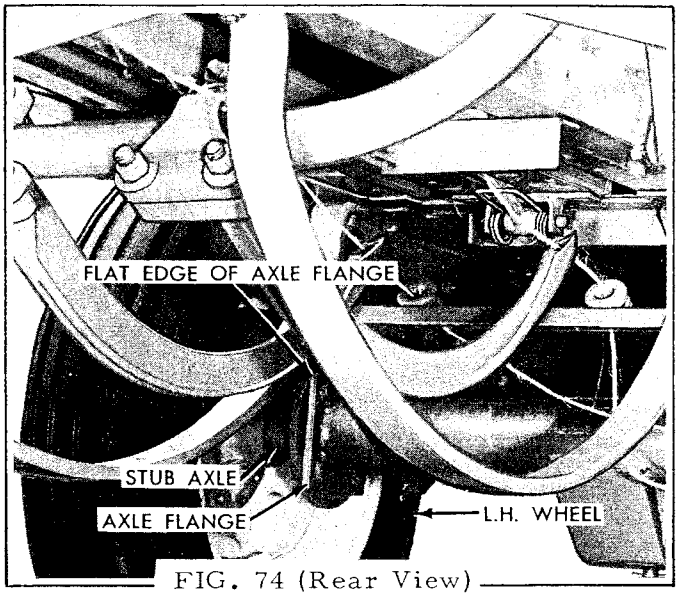


FIG. 74 (Rear View)

FIG. 72

The right and left hand side of the Baler is determined by facing in direction of travel. The serial number is located on R.H. upper bale chamber channel.

When setting up the Baler, always use bolt just long enough to extend through nut, and do not tighten until all bolts have been installed in the assembly. Use lockwasher under all nuts, and where a slotted hole or wood is next to the lockwasher of head of bolt, a flat washer must be used.

Remove all wires and bolts necessary to remove items that are not in their proper location for operation.

TONGUE ASSEMBLY (FIG. 72, 73)

Raise front of Baler slightly and place Tongue Assembly over guide and position rear of tongue in bracket, and install tongue retaining pin with cotter pin below bracket. Tongue can also be installed while baler is resting on L.H. side on shipping crate.

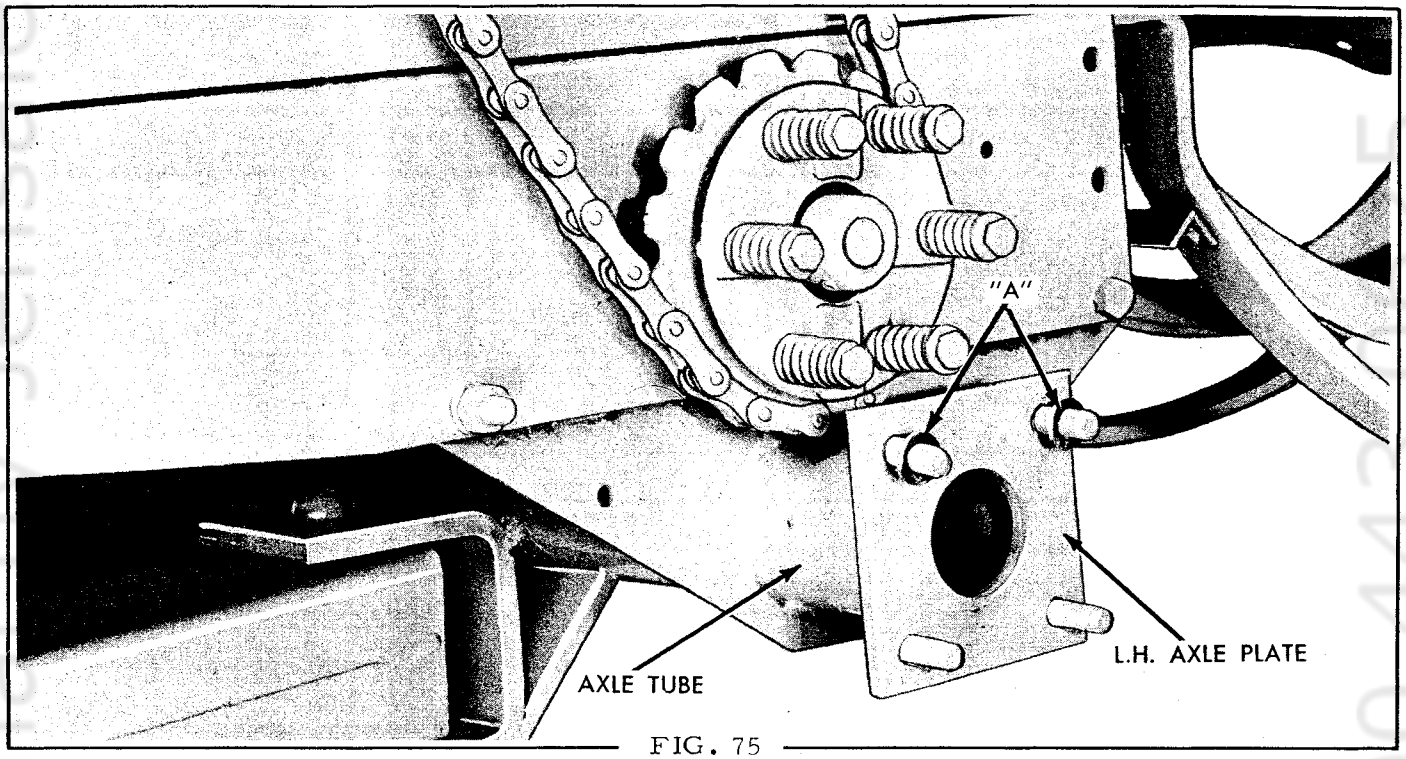


FIG. 75

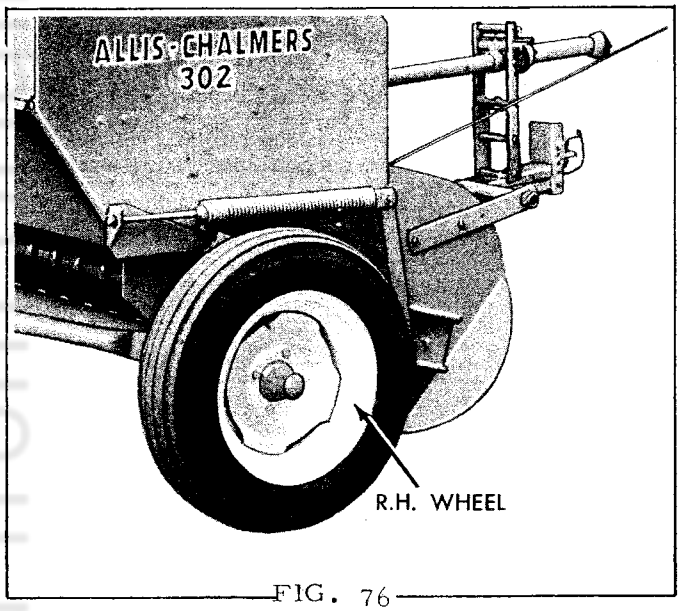


FIG. 76

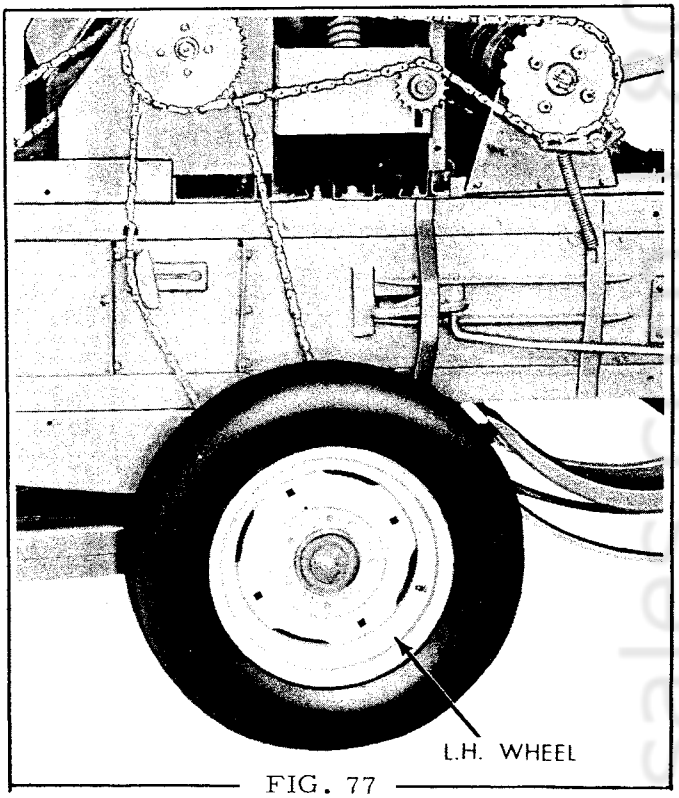


FIG. 77

WHEELS (FIG. 74, 75, 76, 77)

Place jack under axle tube and raise baler high enough to permit installation of L.H. wheel and stub axle. A flat 16 gauge washer must be placed between axle plates on top bolts at location "A" to give proper camber. Make certain flat surface on stub axle flange is up to prevent interference with pick-up slip clutch. Install R.H. wheel and axle as sembly in same manner.

NOTE: R.H. hub has four wheel attaching bolts, and L.H. hub has six wheel attaching bolts.

R.H. tire is a 4 ply, 5:90 x 15, while L.H. tire is a 6 ply, 6:40 x 15. The wheel attaching bolts should be torqued to 75 ft. lbs. Inflate L.H. tire to 40 lbs., and R.H. tire to 28 lbs.

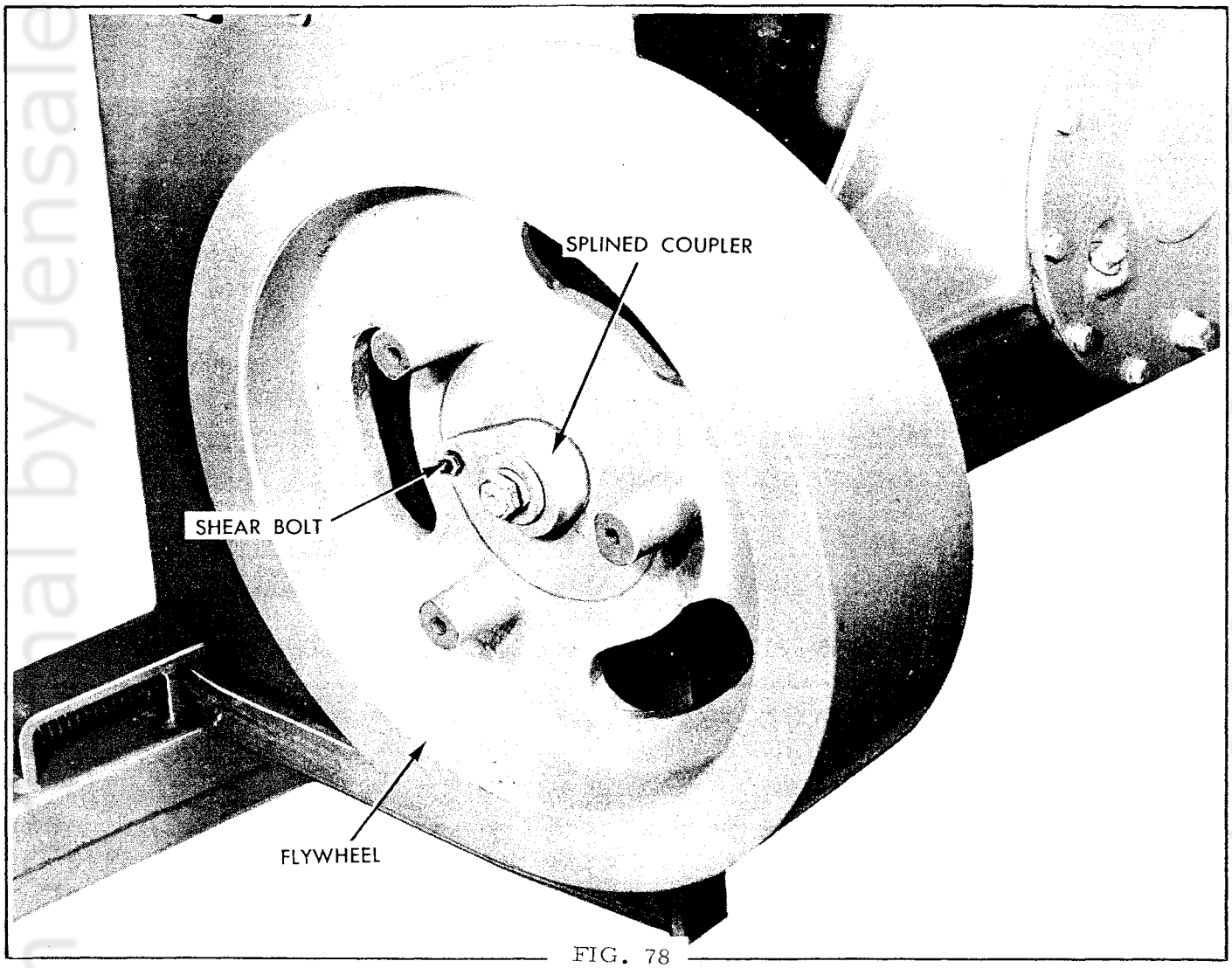


FIG. 78

FLYWHEEL (FIG. 78, 79)

Clean input shaft and place thrust washer on shaft.

Place flywheel on input shaft. Place splined coupler on input shaft and install shear bolt as shown. Place loctite on threads of capscrews and secure flywheel assembly to input shaft with capscrew.

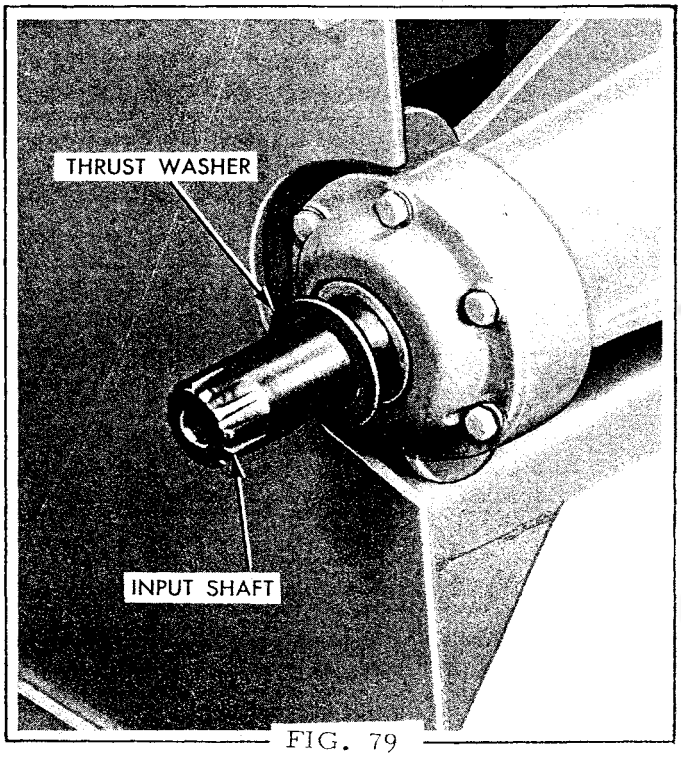


FIG. 79

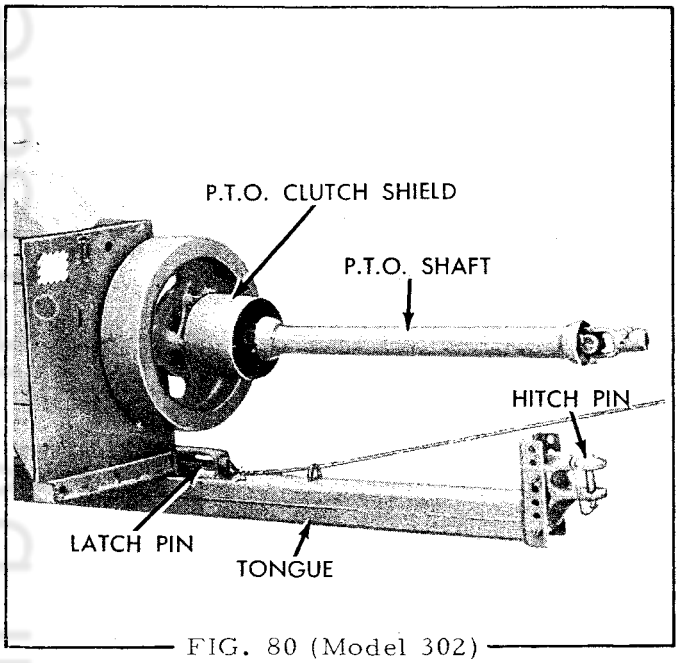


FIG. 80 (Model 302)

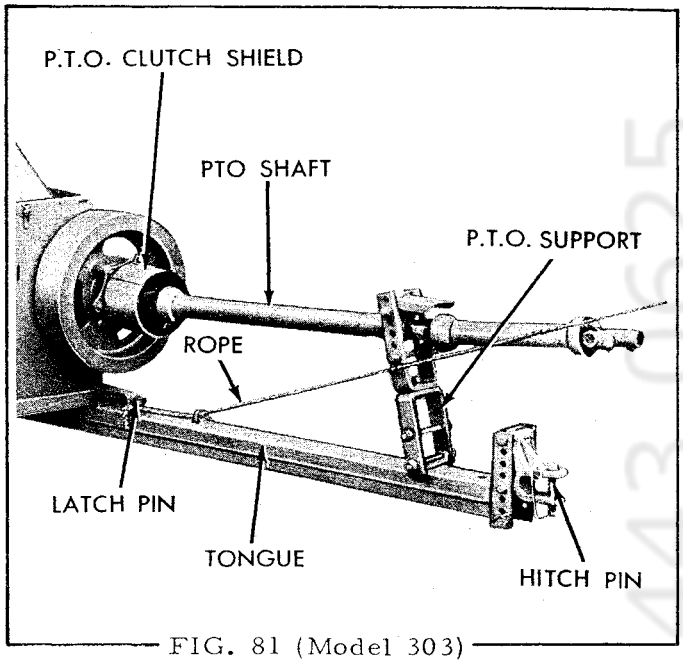


FIG. 81 (Model 303)

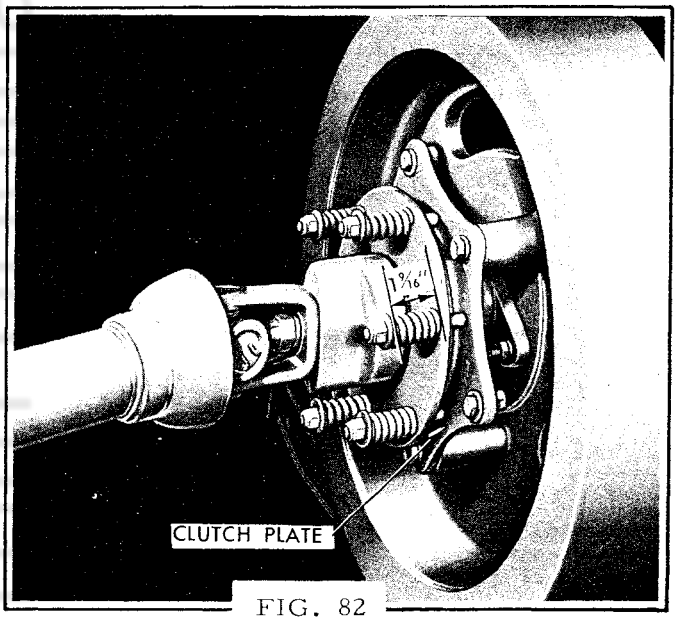


FIG. 82

P.T.O. SHAFT ASSEMBLY (FIG. 80, 81 & 82)

Attach P.T.O. Assembly to flywheel with three capscrews, placing a lockwasher under head of capscrew. Tighten the three capscrews evenly. The six P.T.O. slip clutch springs should be set at 1-9/16" overall spring length. Bolt P.T.O. clutch shield in place.

Bolt P.T.O. support to bracket on tongue with long adjusting yoke up and short yoke down. (303 only)

Attach rope to latch pin.

Place hitch pin in clevis of tongue assembly.

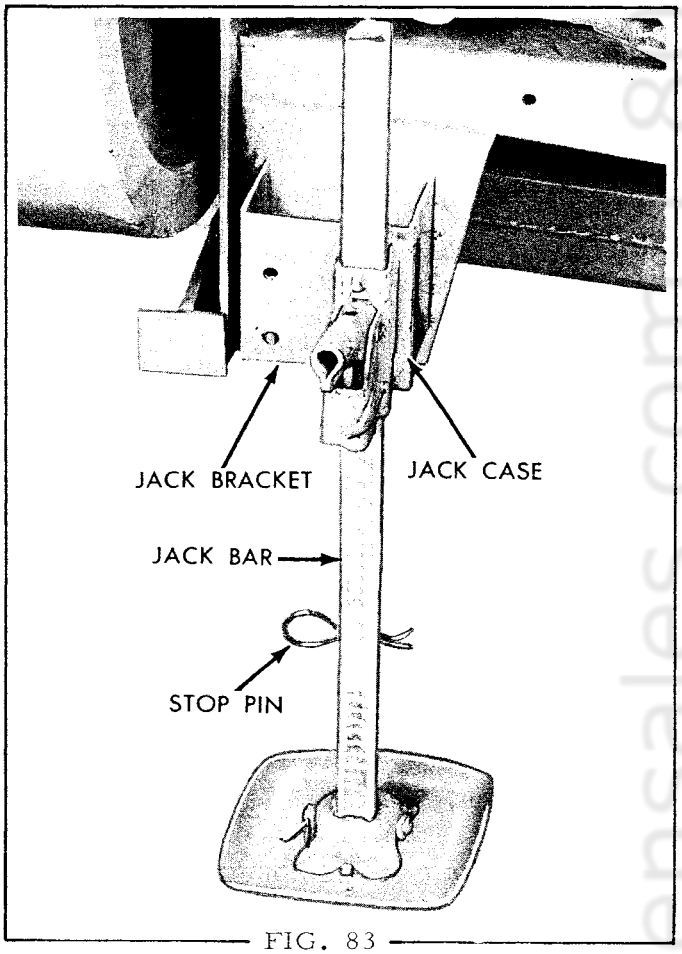


FIG. 83

JACK (FIG. 83)

Bolt Jack to rear set of holes on jack bracket. When jack is in transport position, the stop pin must be placed through jack bar above jack case.

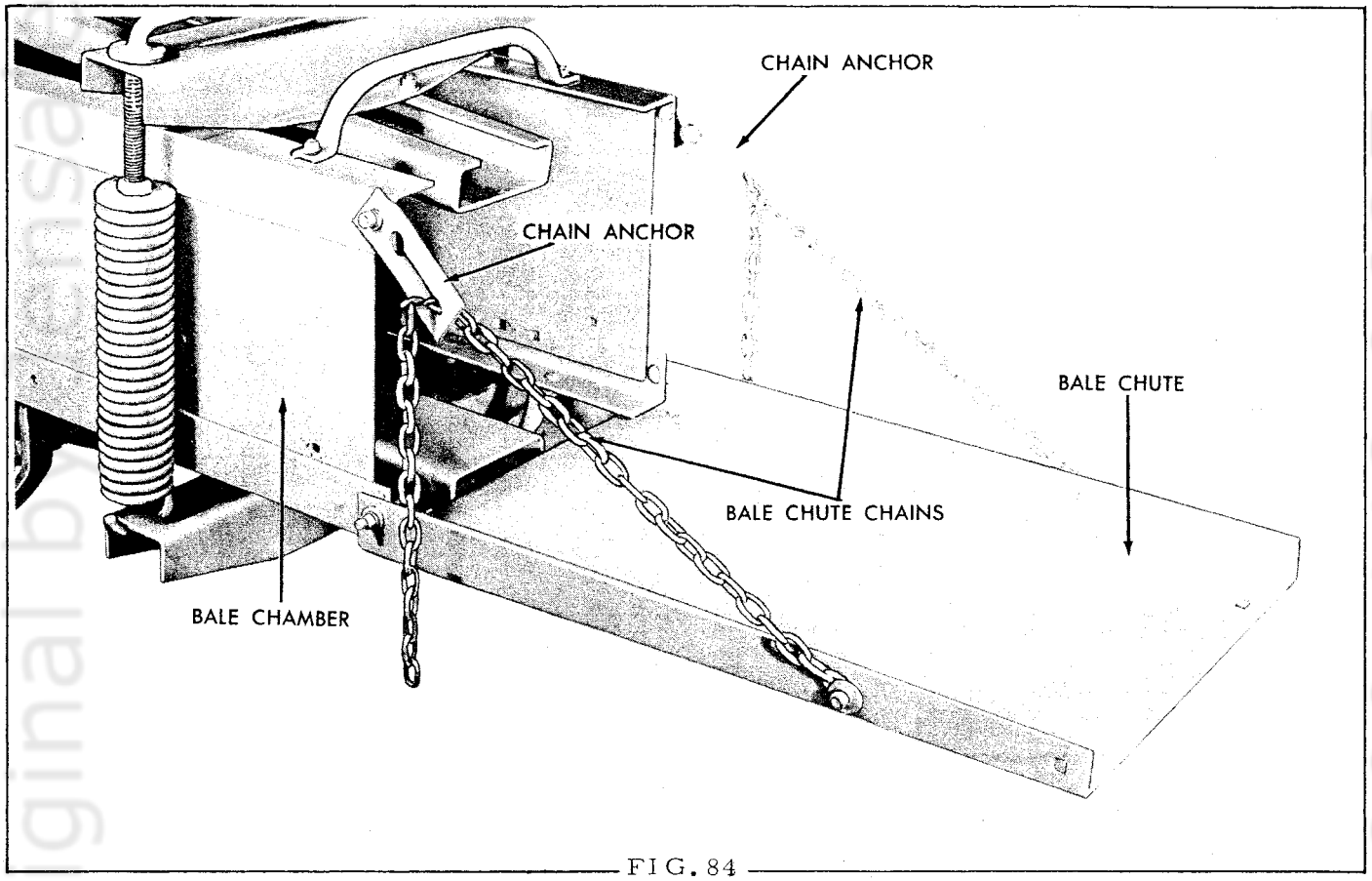


FIG. 84

BALE CHUTE (FIG. 84)

Bolt Bale Chute to bale chamber side u sing spacers on carriage bolts.

Bolt chain anchors to upper rear hole of bale chamber side again using s pacers on carriage bolts. Bolt bale chute chains to bale c hute using second hole from rear.

Attach bale chute chains to chain anchors.

FIG. 85

Bolt L.H. chain shield in p lace.

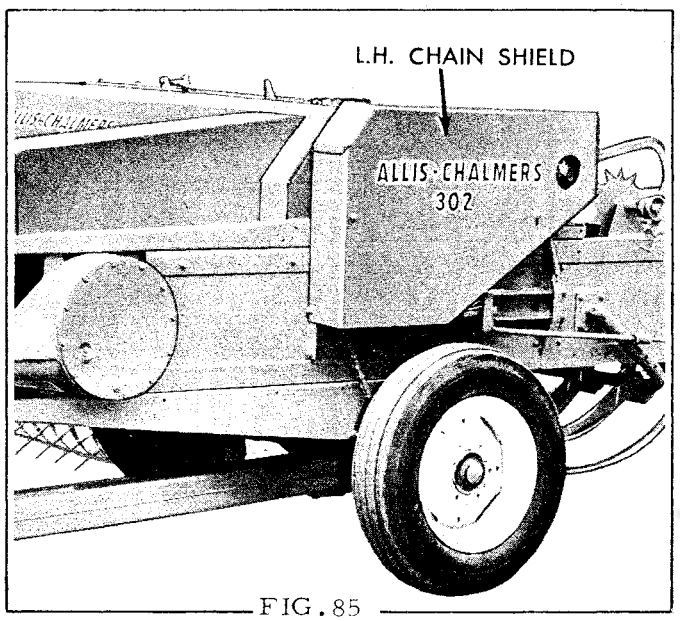


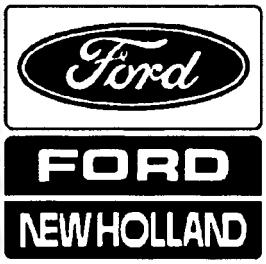
FIG. 85

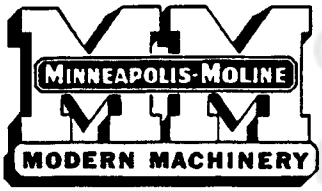
BREAK-IN PERIOD

Lubricate machine as outlined in Lubri cation Chart. Check all slip clutches to make certain they are not stuck and are free to operate. Rotate flywheel by hand in direction of arrow to make certain everything is free. Operate machine just above idle for a half hour to make certain all parts operate freely. After operating for a half hour, check bearings for excessive heating, chains for alignment and proper t ension

After this break-in period, the unit should be ready to deliver to customer.

NOTES





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JENSALES

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